5-3910-202-15

# TM 5-3910-202-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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## OPERATOR, ORGANIZATIONAL, FIELD, AND DEPOT MAINTENANCE MANUAL

## CONVEYOR, BELT:

300 TONS PER HR; WHEEL MOUNTED;
PNEUMATIC TIRES; ELECTRIC DRIVEN;
AC, 10 HP, 416 V, 3 PHASE 60 CYCLE;
50 FT LONG; 24 IN. BELT
(BARBER-GREENE MODEL PG70)
FSN 3910-790-2175

This copy is a reprint which includes current pages from Changes 1 through 3.

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*HEADQUARTERS, DEPARTMENT OF THE ARMY*
*JULY 1961*

D 101.11:

READEX FICHE best copy available

## SAFETY PRECAUTIONS

### Before Operation

Keep machinery free of grease, oil, and mud.

Always see that the conveyor is connected to the proper voltage and is well grounded. Use a suitable grounding rod and connect a ground wire to the conveyor frame. Electrical faults in the power cable, electric motor, and generator equipment could result in death by electrocution from contact with an ungrounded conveyor.

Always disconnect the power supply cable before working on electrical circuit.

Stand clear of the conveyor frame when the hydraulic control valve is placed in lower position.

### During Operation

Never operate the conveyor with any of the protective guards removed.

Never reach behind a protective guard or shield while conveyor is in operation.

Do not make any adjustments while the conveyor is operating.

Always disconnect the power supply cable before working on electrical circuit.

Always allow sufficient clearance for operation.

### After Operation

Always disconnect the power supply cable before working on electrical circuit.

Stand clear of the conveyor frame when the hydraulic control valve is placed in lower position.

When using monobromotrifluoromethane fire extinguisher, avoid breathing of smoke, as it may be fatal.

Failure to observe the above safety precautions may result in damage to the equipment or bodily injury or death to the operator.

# TECHNICAL MANUAL

## Operator, Organizational Field, and Depot Maintenance Manual

## CONVEYOR BELT: 300 TONS PER HR; WHEEL MOUNTED; PNEUMATIC TIRES; ELECTRIC DRIVEN; AC, 10 HP, 416 V, 3 PHASE 60 CYCLE; 50 FT LONG; 24 IN. BELT (BARBER-GREENE MODEL PG70) FSN 3910–790–2175

TM 5–3910–202–15
CHANGES No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *9 April 1963*

TM 5–3910–202–15, 10 July 1961, is changed as follows:

*Page 3*, paragraph 1*c*, lines 1 and 2. Delete "as specified in AR 700–38." and substitute "in this manual on DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8 or 9)."

Lines 4 and 5. Delete "General, U. S. Army Engineer Maintenance Center, Corps of Engineers, ATTN: EMCJM," and substitute "Officer, U. S. Army Mobility Support Center, ATTN: SMOMS–MS,".

*d*. (Added) Report all equipment improvement recommendations as prescribed by TM 38–750.

### 2. Record and Report Forms
(Superseded)

*a*. DA Form 2258 (Depreservation Guide of Engineer Equipment).

*b*. For other record and report forms applicable to the operator, crew, and organizational maintenance, refer to TM 38–750.

*Note.* Applicable forms, excluding standard Form 46 (United States Government Motor Vehicle Operator's Identification Card) which is carried by the operator, will be kept in a canvas bag mounted on the equipment.

*Page 13*, paragraph 9*a*, lines 1 and 2. Delete "before-operation services (par. 39)" and substitute "quarterly preventive maintenance services (par. 41)."

Paragraph 12*a*, line 1. Delete "before-operation" and substitute "daily preventive maintenance".

Paragraph 13, lines 5 through 9. After "12).", delete rest of paragraph.

*Page 17*, paragraph 19*a*, line 1. Delete "before-operation" and substitute "daily preventive maintenance".

Paragraph 20*b*. Delete.

*Page 19*, paragraph 23*b*, line 1. Delete "before-operation" and substitute "daily preventive maintenance".

Paragraph 24, lines 2 through 4. Delete last sentence and substitute "Lubricate more frequently."

Paragraph 28, lines 4 and 5. Delete "before-operation services (par. 39)." and substitute "preventive maintenance services (pars. 38–41)."

### 38. General
(Superseded)

To insure that the conveyor belt is ready for operation at all times, it must be inspected systematically, so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance services to be performed are listed and described in paragraphs 39 and 41. The item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the unit shall be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment if operation were continued. All deficiencies and shortcomings will be recorded, together with the corrective action taken, on DA Form 2404 (Equipment Inpsection and Maintenance Worksheet) at the earliest possible opportunity.

## 39. Daily Preventive Maintenance Services

This paragraph contains an illustrated tabulated listing of preventive maintenance services which must be performed by the operator. The item numbers are listed consecutively and indicate the sequence of minimum requirements. Refer to figure 14 for the daily preventive maintenance services.

## 40. Organizational Maintenance.

Rescinded.

## 41. Quarterly Preventive Maintenance Services

(Superseded)

*a.* This paragraph contains an illustrated tabulated listing of preventive maintenance services which must be performed by organizational maintenance personnel at quarterly intervals. A quarterly interval is equal to 3 calendar months or 250 hours of operation, whichever occurs first.

*b.* The item numbers are listed consecutively and indicate the sequence of minimum requirements. Refer to figure 14.1 for the quarterly preventive maintenance services.

## 109. Inspection and Maintenance of Equipment in Storage

(Superseded)

*a. Inspection.* When equipment has been placed in storage, all scheduled preventive maintenance services, including inspection, shall be suspended and preventive maintenance inspection shall be performed as specified herein. Refer to AR 743–505.

*b. Worksheet and Preventive Maintenance.* DA Form 2258 (Depreservation Guide of Engineer Equipment) and applicable forms listed in TM 38–750 will be prepared for each major item of equipment when initially placed in limited storage and every 90 days thereafter. Perform required maintenance promptly to make sure equipment is mechanically sound and ready for immediate use.

*c. Exercising.* Service equipment in limited storage every 90 days in accordance with paragraph 41. Operate equipment long enough to bring it up to operating temperature and insure complete lubrication of all bearings, gears, and the like. Represerve equipment after operation.

## 111. Record and Report Forms

(Superseded)

| | |
|---|---|
| *a.* DA Form 2258 | (Depreservation Guide of Engineer Equipment). |

*b.* For other record and report forms applicable to field and depot maintenance, refer to TM 38–750.

*Note.* Applicable forms, excluding standard Form 46 which is carried by the operator, will be kept in a canvas bag mounted on the equipment.

*Page 125,* appendix I, paragraph 5, lines 1 and 2. Delete AR 700–38 and AR 750–5 entirely. Add the following:

| | |
|---|---|
| TM 38–750 | The Army Equipment Records System and Procedures. |

*Page 136,* appendix III, paragraph 3, lines 4 and 5. Delete "General, U. S. Army Engineer Maintenance Center, Corps of Engineers," and substitute "Officer. U. S. Army Mobility Support Center, ATTN: SMOMS–MS,".

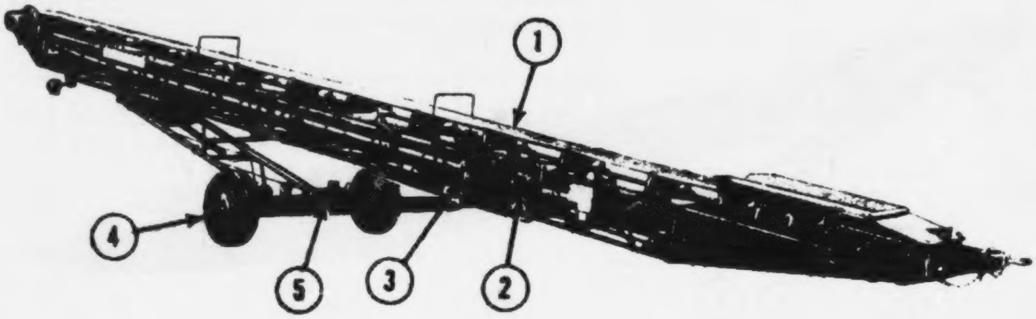
Line 6. Delete "; ATTN: EMCDM".

# PREVENTIVE MAINTENANCE SERVICES

## DAILY

TM 5-3910-202-15 CONVEYOR

BARBER-GREENE MODEL PG70



LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER

| ITEM | | PAR. REF |
|---|---|---|
| 1 | **CONVEYOR BELT**. Check for proper operation and adjustment. | |
| 2 | **GROUNDING ROD AND WIRE**. Check for proper grounding. | |
| 3 | **FIRE EXTINGUISHER**. Check for broken seal. | |
| 4 | **TIRES**. Perform visual check for proper inflation.<br>Correct pressure is 80 psi. | |
| 5 | **AIR TANK**. Drain condensate. (After movement by towing.) | |
| | **NOTE. OPERATION**. During operation check all controls for proper operation. | |

MSC 3910-202-15/14

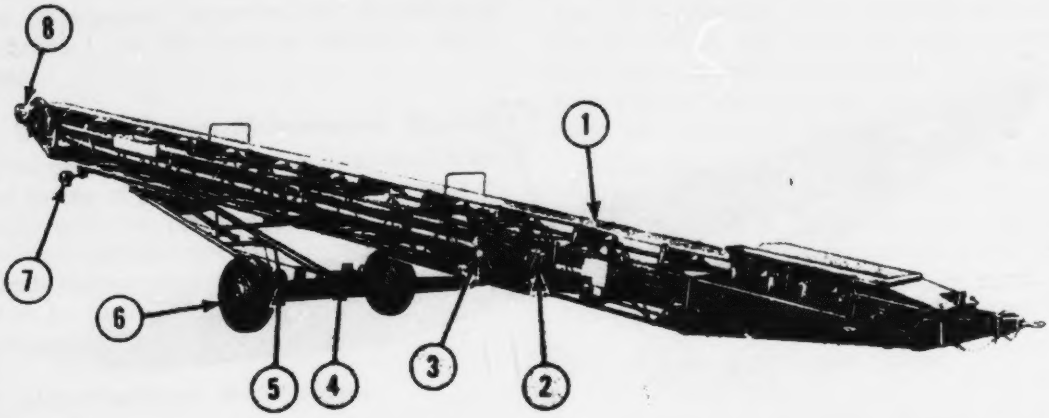
*Figure 14.* (Superseded) *Daily preventive maintenance services.*

# PREVENTIVE MAINTENANCE SERVICES
# QUARTERLY

TM 5-3910-202-15

CONVEYOR

BARBER-GREENE MODEL PG70



LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER

| ITEM | | PAR. REF |
|---|---|---|
| 1 | CONVEYOR BELT, ROLLERS, SCRAPERS AND HOPPER. Check belt and flashing for excessive wear. Check for proper operation, alinement and adjustment. Check for missing hardware. Tighten loose hardware. | |
| 2 | ELECTRICAL SYSTEM. Check switch and motor for proper operation. Check cable for insulation breakdown. Replace defective cable. Tighten all loose connections. Inspect for proper grounding. | |
| 3 | FIRE EXTINGUISHER. Weigh extinguisher to determine if fully charged. Check for broken seal. | |
| 4 | AIR SYSTEM. Tighten loose hardware. Check for missing hardware. Clean filter and drain condensate. (500 hours) | |

*Figure 14.1.* (Added) *Quarterly preventive maintenance services.*

| ITEM | | PAR. REF |
|---|---|---|
| 5 | HYDRAULIC SYSTEM. Check for proper operation. Correct leaks. Check for missing hardware. Tighten loose hardware. Clean dirty screen and breather. (500 hours) Check fluid level. See LO. | |
| 6 | TIRES. Check for breaks, cuts and excessive wear. Check pressure. Correct pressure is 80 psi. | |
| 7 | LIGHTS AND WIRING. Check for proper operation (1000 hours). Tighten all loose connections. Replace defective wiring. | |
| 8 | GEAR REDUCER DRIVE BELTS. Check belts for excessive wear, proper alinement, and adjustment. Proper deflection is 1/2 inch midway between pulleys. | |
| | NOTE. OPERATIONAL TEST. During operation check for unusual noise or vibration and proper operation. | |

MSC 3910-202-15/14.1

*Figure 14.1*—Continued.

By Order of the Secretary of the Army:

EARLE G. WHEELER,
*General, United States Army,*
*Chief of Staff.*

Official:
J. C. LAMBERT,
*Major General, United States Army,*
*The Adjutant General.*

Distribution:

*Active Army:*
- USASA (2)
- DCSLOG (1)
- CNGB (1)
- TSG (1)
- CofEngrs (3)
- CSigO (1)
- CofT (1)
- USA Maint Bd (1)
- USAARTYBD (2)
- USAARMBD (2)
- USAIB (2)
- USARADBD (2)
- USAAESWBD (2)
- USAAVNBD (2)
- USCONARC (3)
- USAMC (5)
- OS Maj Comd (5) except
  - USARJ (10)
- MDW (1)
- Armies (2)
- Corps (2)
- USA Corps (1)
- Div (2)
- Engr Bde (1)
- USMA (2)
- Svc Colleges (2)
- Br Svc Sch (2) except
  - USAES (100)
- GENDEP (OS) (10)
- Engr Dep (OS) (10)
- Army Dep (2)
- USA Trans Tml Comd (2)
- Army Tml (1)
- USAOSA (2)
- Engr Dist (2)
- Div Engr (2)
- Engr Fld Maint Shops (2)
- USAERDL (3)
- Engr Cen (5)
- AMS (3)
- Chicago Engr Proc Ofc (10)
- USA Mbl Spt Cen (36)
- ESCO (10)
- Fld Comd, DASA (8)
- USACOMZEUR (2)
- USAREUR Engr Sup Con Agcy (10)
- USAREUR Engr Proc Cen (2)
- MAAG (1)
- JBUSMC (1)
- Units org under fol TOE:
  - 5-48 (2)
  - 5-114 (2)
  - 5-115 (2)
  - 5-117 (2)
  - 5-237 (5)
  - 5-262 (5)
  - 5-267 (1)
  - 5-278 (5)
  - 5-279 (2)
  - 5-500 (EA, EB, GB) (2)

*NG:* State AG (3).

*USAR:* Units—same as active Army except allowance is one copy to each unit.

For explanation of abbreviations used, see AR 320-50.

Changes in force: C 1 and C 2

TM 5-3910-202-15
C 2

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *10 September 1968*

# Operator, Organizational, Field and Depot Maintenance Manual
# CONVEYOR BELT: 300 TONS PER HR; WHEEL MOUNTED; PNEUMATIC TIRES; ELECTRIC DRIVEN; AC, 10 HP, 416 V, 3 PHASE, 60 CYCLE; 50 FT LONG; 24 IN. BELT (BARBER-GREENE MODEL PG70)
## FSN 3910-790-2175

TM 5-3910-202-15, 10 July 1961, is changed as follows:

*Page 3.* Paragraph 1*c* is superseded as follows:

*c.* Numbers in parentheses on illustrations indicate quantity.

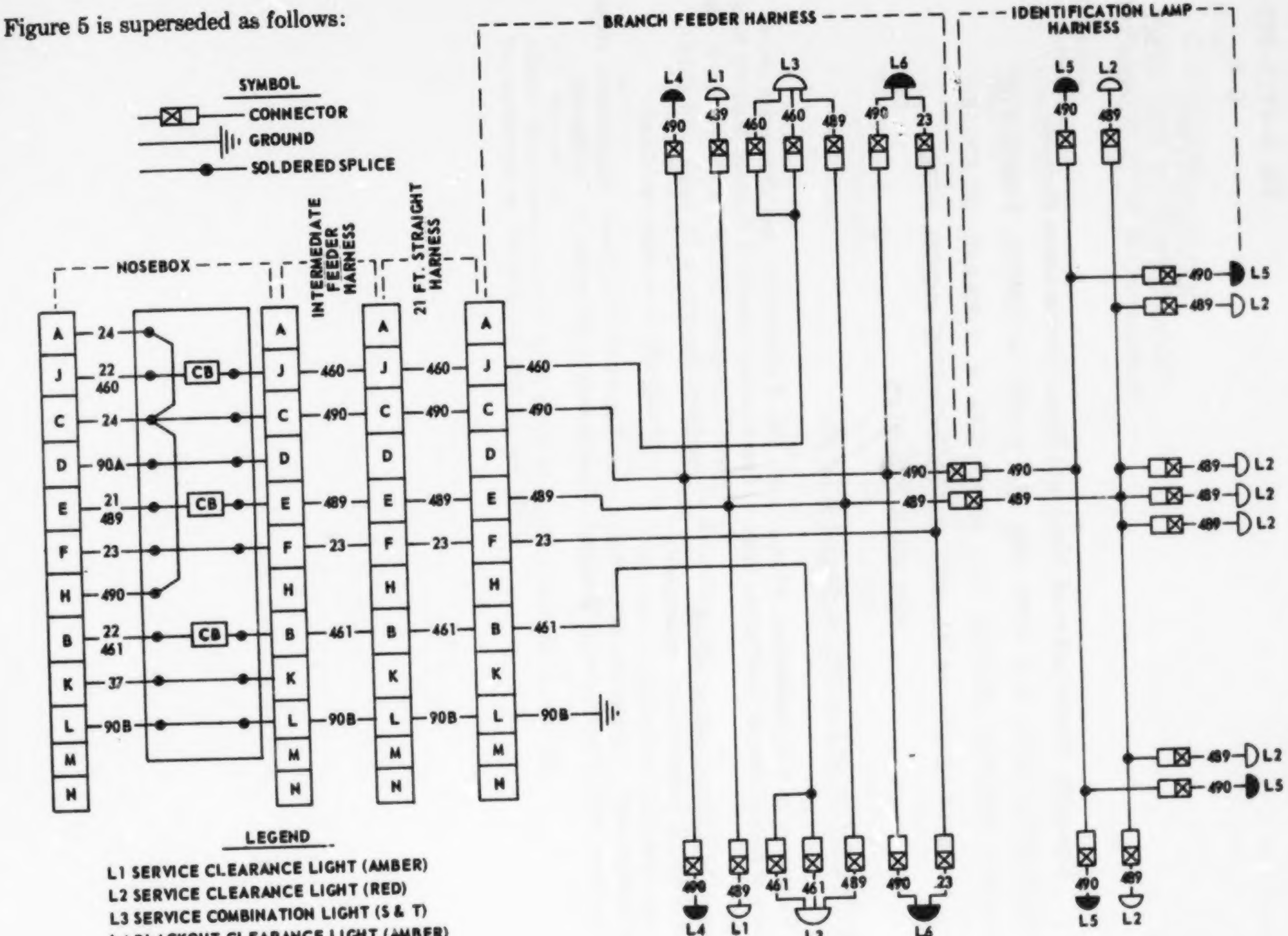
Paragraph 1*d* is superseded as follows:

*d.* Report of errors, omissions and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to Commanding General U. S. Army Mobility Equipment Command, ATTN: AMSME-MPP, 4300 Goodfellow Boulevard, St. Louis, Mo. 63120

Paragraph 1*e* is added as follows:

*e.* Report all equipment improvement recommendations as prescribed by TM 38-750.

*Page 8*. Figure 5 is superseded as follows:

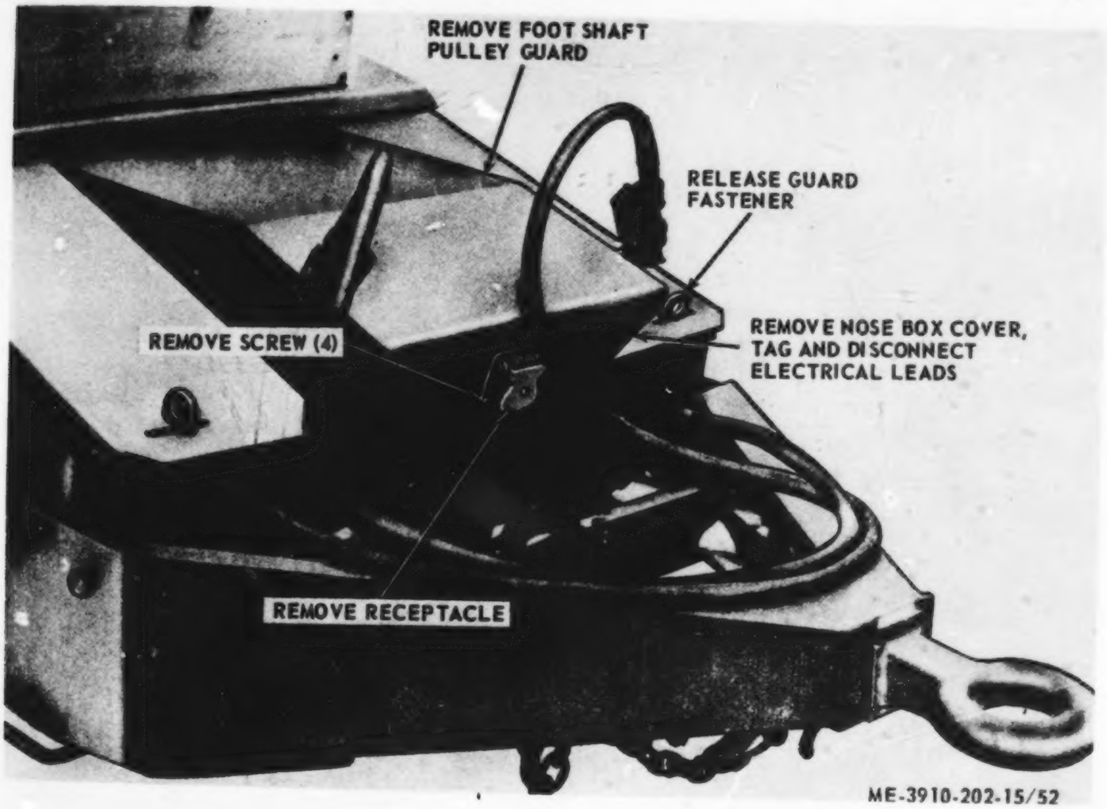

SYMBOL
CONNECTOR
GROUND
SOLDERED SPLICE
NOSEBOX
INTERMEDIATE FEEDER HARNESS
21 FT. STRAIGHT HARNESS
BRANCH FEEDER HARNESS
IDENTIFICATION LAMP HARNESS
A
J
C
D
E
F
H
B
K
L
M
N
CB
24
22
460
90A
21
489
23
490
461
37
90B
L1
L2
L3
L4
L5
L6
ME 3910-202-15/5

LEGEND

L1 SERVICE CLEARANCE LIGHT (AMBER)
L2 SERVICE CLEARANCE LIGHT (RED)
L3 SERVICE COMBINATION LIGHT (S & T)
L4 BLACKOUT CLEARANCE LIGHT (AMBER)
L5 BLACKOUT CLEARANCE LIGHT (RED)
L6 BLACKOUT CLEARANCE LIGHT (S & T)
CB CIRCUIT BREAKER
R1 R2 R3 RECEPTACLE AND PLUG CONNECTOR
R4 FRONT RECEPTACLE

*Figure 5. Conveyor chassis wiring diagram.*

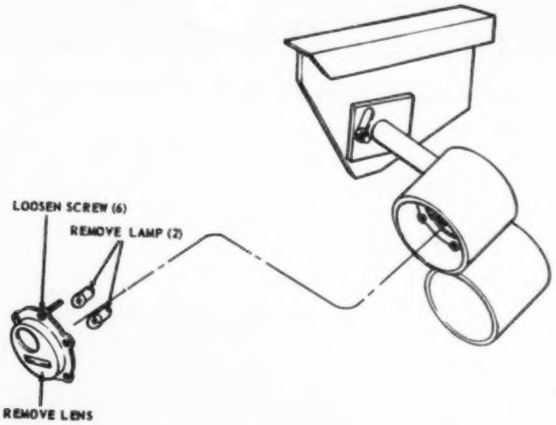
*Page 69*. Figure 52 is superseded as follows:


REMOVE FOOT SHAFT PULLEY GUARD
RELEASE GUARD FASTENER
REMOVE NOSE BOX COVER, TAG AND DISCONNECT ELECTRICAL LEADS
REMOVE SCREW (4)
REMOVE RECEPTACLE

ME-3910-202-15/52

*Figure 52. Trailer receptacle removal and installation.*

*Page 71*. Figure 54 is superseded as follows:


LOOSEN SCREW (6)
REMOVE LAMP (2)
REMOVE LENS

NOTE: REMOVE LENS AND LAMPS ON OPPOSITE SIDE IN A SIMILAR MANNER

ME-3910-202-15/54

*Figure 54. Tail and blackout lamp and lens replacement.*

*Page 72.* Figure 55 is superseded as follows:

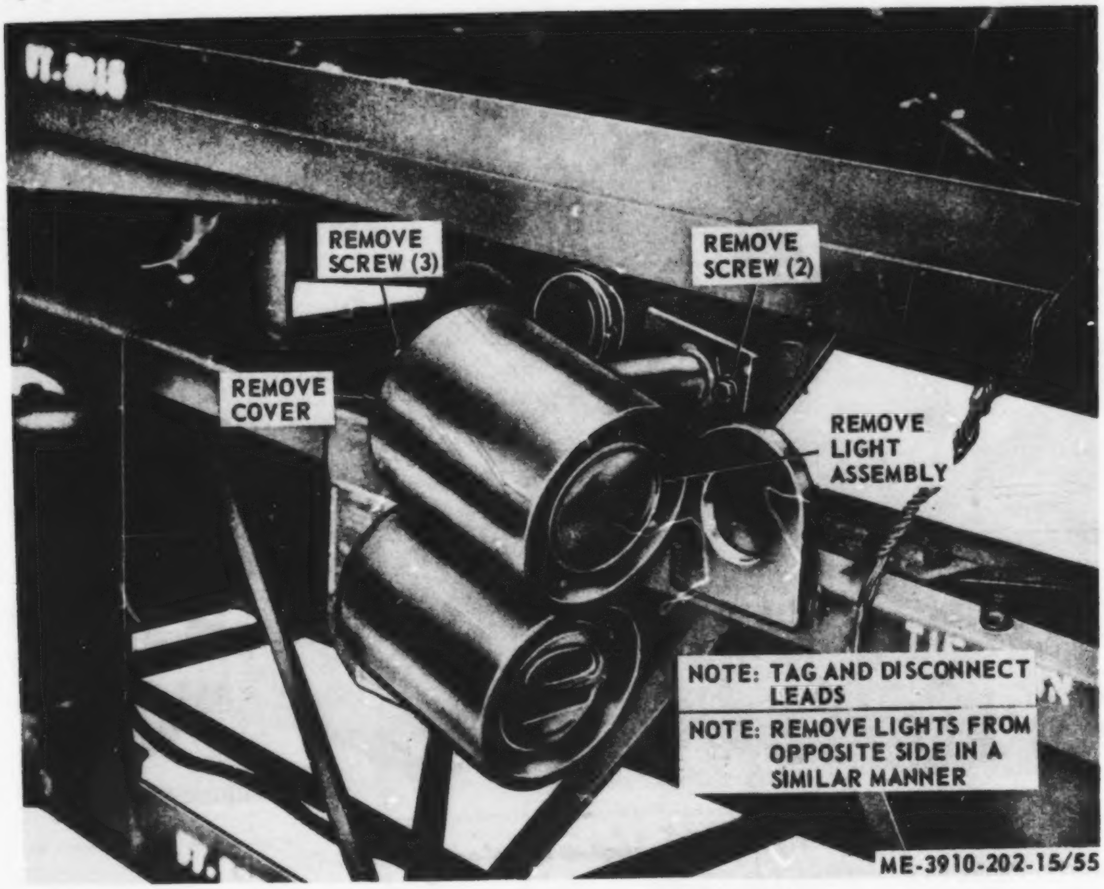

REMOVE SCREW (3)
REMOVE SCREW (2)
REMOVE COVER
REMOVE LIGHT ASSEMBLY
NOTE: TAG AND DISCONNECT LEADS
NOTE: REMOVE LIGHTS FROM OPPOSITE SIDE IN A SIMILAR MANNER
ME-3910-202-15/55

*Figure 55. Tail and blackout light removal and installation.*

*Page 74*. Paragraph 90*a* (2) and paragraph 90*e* (1). Change figure 59 to read 59A and 59B.

*Page 77*. Figure 59B is superseded as follows:

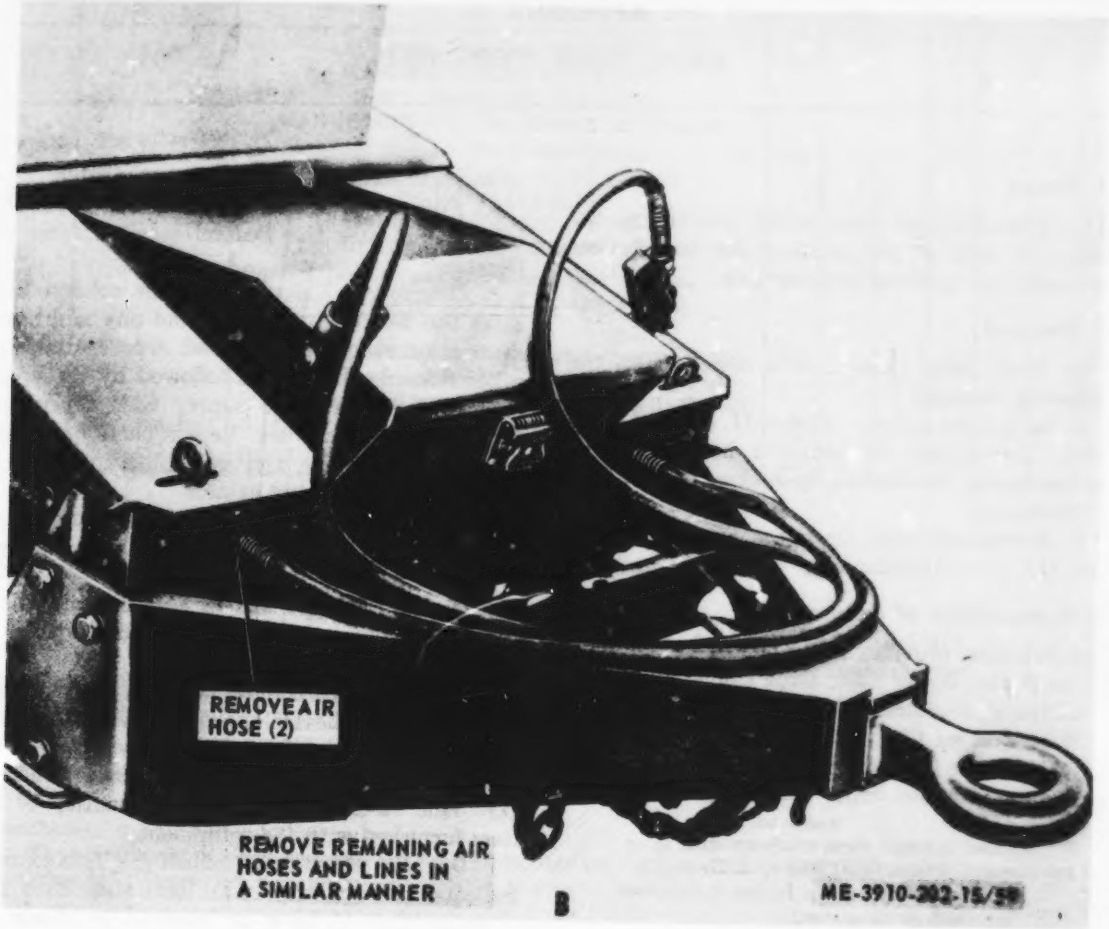

REMOVE AIR
HOSE (2)
REMOVE REMAINING AIR
HOSES AND LINES IN
A SIMILAR MANNER
B
ME-3910-202-15/59

*Figure 59B. Air hose, lines and fittings removal and installation.*

*Pages 135 through 139*. Appendix III is superseded as follows:

## APPENDIX III

## BASIC ISSUE ITEMS LIST

### 1. Scope

This appendix lists items which accompany the conveyor belt or are required for installation, operation, or operator's maintenance.

### 2. General

This Basic Issue Items List is divided into the following sections:

*a. Basic Issue Items — Section II*. A list of items which accompany the conveyor belt or are required for the installation, operation, or operator's maintenance.

*b. Maintenance and Operating Supplies — Section III*. (Not Applicable).

### 3. Explanation of Columns

The following provides an explanation of columns in the tabular list of Basic Issue Items, Section II.

*a. Source, Maintenance, and Recoverability Codes (SMR), Column (1):*

(1) Source Code, indicates the selection status and source for the listed item. Source code is:

| Code | Explanation |
|---|---|
| P | Applied to repair parts which are stock in or supplied from GSA/DSA or Army supply system, and authorized for use at indicated maintenance categories. |

Note: Source code and level of maintenance are not shown on common hardware items known to be readily available in Army supply channels and through local procurement.

(2) Maintenance Code, indicates the lowest category of maintenance authorized to install the listed item. The maintenance level code is:

| Code | Explanation |
|---|---|
| C | Operator/crew |

(3) Recoverability Code, indicates whether unservicable items should be returned for recovery or salvage. Items not coded are expendable.

*b. Federal Stock Number, Column (2)*. This column indicates the Federal stock number for the item.

*c. Description, Column (3)*. This column indicates the Federal item name and any additional description of the item required. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses. Repair parts quantities included in kits, sets, and assemblies are shown in front of the repair part name.

*d. Unit of Issue, Column (4)*. This column indicates the unit used as a basis for issue, e.g., ea, pr, ft, yd, etc.

*e. Quantity Incorporated in Unit Pack, Column (5)*. This column indicates the actual quantity contained in the unit pack.

*f. Quantity Incorporated in Unit, Column (6)*. This column indicates the quantity of the item used in the functional group.

*g. Quantity Furnished With Equipment, Column (7)*. This column indicates the quantity of an item furnished with the equipment.

*h. Quantity Authorized, Column (8)*. This column indicates the quantity of an item authorized the operator/crew to have on hand or to obtain as required. As required items are indicated with an asterisk.

*i. Illustration, Column (9)*. This column is divided as follows:

(1) *Figure number, column (9)(a)*. Indicates the figure number of the illustration in which the item is shown.

(2) *Item number, column (9)(b)*. Indicates the callout number used to reference the item in the illustration.

## Section II. BASIC ISSUE ITEMS

| (1) SMR Code | (2) Federal stock No. | (3) Description | (4) Unit of issue | (5) Qty inc in unit pack | (6) Qty inc in unit | (7) Qty furn with equip | (8) Qty auth | (9) Illustration | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | (a) Fig. No. | (b) Item No. |
| | | GROUP 31 — BASIC ISSUE ITEMS, MANUFACTURER INSTALLED | | | | | | | |
| | | 3100 — BASIC ISSUE ITEMS, MANUFACTURER OR DEPOT INSTALLED | | | | | | | |
| PC | | DA Technical Manual TM 5-3910-202-15 | Ea | | | 1 | 1 | | |
| | | GROUP 32 — BASIC ISSUE ITEMS, TROOP INSTALLED | | | | | | | |
| | | 3200 — BASIC ISSUE ITEMS, TROOP INSTALLED OR AUTHORIZED | | | | | | | |
| PC | 7520-559-9618 | CASE: Operation and Maintenance Publications, Cotton, duck water repellent, mildew resistant, MIL-B-11743B | Ea | | | 1 | 1 | | |
| PC | 4210-555-8837 | EXTINGUISHER: Fire Monobromotrifluoromethane, charged, hand type 2¾ lb. cap., shatterable cylinder, penetrating seal type valve, w/bracket, MIL-E-52031 | Ea | | | 1 | 1 | | |
| PC | 4930-360-2801 | GREASE GUN: Hand lever operated, 16 oz. cap. | Ea | | | 1 | * | | |
| PC | 4930-430-3264 | HOSE: Grease | Ea | | | 1 | * | | |

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
*General, United States Army,*
*Chief of Staff.*

Official:
KENNETH G. WICKHAM,
*Major General, United States Army,*
*The Adjutant General.*

Distribution:

To be distributed in accordance with DA Form 12-25, (qty rqr block no. 326) Section II, Organizational maintenance requirements for Conveyors.

Changes in force: C 1, C 2, and C 3

CHANGE
No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *10 September 1973*

# Operator, Organizational, Direct Support, General Support and Depot Maintenance Manual for CONVEYOR BELT: 300 TONS PER HR; WHEEL MOUNTED; PNEUMATIC TIRES; ELECTRIC ELECTRIC DRIVEN; AC, 10 HP, 416 V, 3 PHASE, 60 HERTZ; 50 FT LONG; 24 IN. BELT (BARBER-GREENE MODEL PG70) FSN 3910-790-2175

TM 5-3910-202-15, 10 July 1961, is changed as follows:

The title is changed as shown above.

*Page 1.* In table of contents, change Appendix III to read: "BASIC ISSUE ITEM LIST AND ITEMS : TROOP INSTALLED OR AUTHORIZED"

*Page 3.* Paragraph 1 is superseded as follows:

## 1. Scope

*a.* This manual is for your use in operating and maintaining the Barber-Greene Model PG70 Conveyor.

*b.* You can improve this manual by calling attention to errors and by recommending improvements, using DA Form 2028 (Recommended Changes to Publications) or by a letter, and mail direct to Commander, US Army Troop Support Command, ATTN: AMSTS-MPP, 4300 Goodfellow Boulevard, St. Louis, MO 63120. A reply will be furnished direct to you.

*c.* Report all equipment improvement recommendations as prescribed in TM 38-750.

*Page 135.* Appendix III is superseded as follows:

# APPENDIX III
# BASIC ISSUE ITEM LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED
## Section I. INTRODUCTION

## 1. Scope

This appendix lists basic issue items, items troop installed or authorized which accompany the conveyor and are required by the crew/operator for operation, installation, or operator's maintenance.

## 2. General

This basic issue items, items troop installed or authorized list is divided into the following sections:

*a. Basic Issue Items List — Section II.* Not applicable.

*b. Items Troop Installed or Authorized List — Section III.* A list in alphabetical sequence of items which at the discretion of the unit commander may accompany the end item, but are NOT subject to be turned in with the end item.

## 3. Explanation of Columns

The following provides an explanation of columns in the tabular list of Basic Issue Items List, Section II, and Items Troop Installed or Authorized, Section III.

*a. Source, Maintenance, and Recoverability Code(s) (SMR):* Not applicable.

*b. Federal Stock Number.* This column indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

*c. Description.* This column indicates the Federal item name and any additional description of the item required.

*d. Unit of Measure (U/M).* A 2 character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

*e. Quantity Authorized (Items Troop Installed or Authorized Only).* This column indicates the quantity of the item authorized to be used with the equipment.

## Section III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST

| (1) SMR code | (2) Federal stock number | (3) Description<br>Reference Number & Mfr. Code | Usable on code | (4) Unit of meas | |
|---|---|---|---|---|---|
| | 4210-555-8837 | EXTINGUISHER, Fire | | EA | 1 |
| | 4930-253-2478 | GREASE GUN | | EA | 1 |
| | 4930-141-8311 | HOSE, GREASE GUN | | EA | 1 |

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
*General, United States Army*
*Chief of Staff*

Official:

VERNE L. BOWERS
*Major General, United States Army*
*The Adjutant General*

Distribution:

To be distributed in accordance with DA Form 12-25B, (qty rqr block No. 938) organizational maintenance requirements for Mining, Quarrying and Aggregate Handling Equipment.

TECHNICAL MANUAL No. 5-3910-202-15

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., *10 July 1961*

# OPERATOR, ORGANIZATIONAL, FIELD, AND DEPOT MAINTENANCE MANUAL

# CONVEYOR BELT: 300 TONS PER HR; WHEEL MOUNTED; PNEUMATIC TIRES; ELECTRIC DRIVEN; AC, 10 HP, 416V, 3 PHASE 60 CYCLE; 50 FT LONG; 24 IN. BELT (BARBER-GREENE MODEL PG70) FSN 3910-790-2175

Paragraph Page
CHAPTER 1. INTRODUCTION
Section I. General 1,2 3,3
II. Description and data 3-6 3
CHAPTER 2. INSTALLATION AND OPERATING INSTRUCTIONS
Section I. Service upon receipt of equipment 7-13 11
II. Movement to a new work site 14,15 16,16
III. Controls and instruments 16,17 16,16
IV. Operation under usual conditions 18-21 17
V. Operation under usual conditions 22-28 19
VI. Operation of auxiliary materiel used in conjunction with the belt conveyor 29-32 19
CHAPTER 3. OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTIONS
Section I. Operator and organizational maintenance tools and equipment 33-35 21
II. Lubrication 36,37 21,21
III. Preventive maintenance services 38-41 25
IV. Troubleshooting 42-48 29
V. Conveyor belt driven assembly 49-56 30
VI. Roller assemblies 57-61 38
VII. Conveyor frame components 62-72 43
VIII. Hydraulic system 73-76 57
IX. Electrical system 77-86 59
X. Air system 87-90 74
XI. Wheel assembly 91-95 79
XII. Push arms, axle assembly, and frame cross braces 96-100 85
CHAPTER 4. DEMOLITION OF CONVEYOR TO PREVENT ENEMY USE 101-105 89
CHAPTER 5. SHIPMENT AND LIMITED STORAGE
Section I. Shipment within zone of interior 106,107 91,92
II. Limited storage 108,109 92,92
CHAPTER 6. FIELD AND DEPOT MAINTENANCE REPAIR INSTRUCTIONS
Section I. General 110-111 95,95
II. Description and data 112,113 95,95
III. Special tools and equipment 114,115 99,99
IV. Troubleshooting 116-123 99,100
V. Head and foot shaft, bearings, and pulley assemblies 124-130 100
VI. Gear reducer assembly 131-134 105
VII. Electric motor and magnetic starter assemblies 135-141 109
VIII. Hydraulic cylinder 142-145 113
IX. Brake assembly and relay valve 146-152 115
X. Wiring harness 153-156 117
XI. Spindle and axle frame assembly 157-163 119
XII. Conveyor belt guard and frame assemblies 164-176 120
APPENDIX I. REFERENCES 125
II. MAINTENANCE ALLOCATION CHART 127
III. BASIC ISSUE ITEMS 135
INDEX 141

# CHAPTER 1

# INTRODUCTION

## Section I. GENERAL

### 1. Scope

*a.* These instructions are published for the use of the personnel to whom the Barber-Greene Model PG70 belt conveyor is issued. It contains information on the operation, organizational maintenance, field and depot maintenance of the equipment. This manual also provides a description of main units and their functions in relationship to other components.

*b.* Appendix I contains a standard list of publications applicable to this manual. Appendix II contains the Maintenance Allocation Chart. Appendix III contains the Basic Issue Items List authorized for use of the operator of this equipment. The Organizational, Field. and Depot Maintenance Repair Parts and Special Tool Lists are contained in TM 5-3910-202-25P.

*c.* Report all deficiencies as specified in AR 700–38. Submit recommendations for changes, additions, or deletions to the Commanding General, U.S. Army Engineer Maintenance Center, Corps of Engineers, ATTN: EMCJM, P.O. Box 119, Columbus 16, Ohio. Direct communication is authorized.

### 2. Operator and Organizational Maintenance Record and Report Forms

For record and report forms applicable to 1st through 5th echelons of maintenance refer to TM 5–505.

## Section II. DESCRIPTION AND DATA

### 3. Description

The Barber-Greene belt conveyor (figs. 1 and 2) Model PG70 is a portable, wheel-mounted unit, with pneumatic tires. The conveyor belt is 50 feet long, 24 inches wide, is electrically driven, and is capable of delivering 300 tons per hour. The conveyor is raised or lowered to the desired position with a hand-operated hydraulic pump and cylinder. The front of the belt conveyor is the towing end, the motor driven end is the rear. The right and left side of the belt conveyor is determined by looking from the rear toward the front or towing end.

### 4. Identification

The identification and instruction plates of of the belt conveyor are illustrated in figure 3 and are located on the conveyor as follows:

*a. Corps of Engineers Data Plate (A).* Located on mounting bracket near control box.

*b. Lifting Diagram Instruction Plate (B).* Located on mounting bracket near control box

*c. Transportation Data Plate (C).* Located on mounting bracket near control box.

*d. Control Box Ground Caution Plate (D).* Located on mounting bracket below control box.

*e. Tire Inflation Instruction Plate (E).* Located on mounting bracket near control box.

*f. Maximum Allowance Speed Data Plate (F).* Located on mounting bracket near control box.

*g. Hoist Cylinder Push Arm Caution Plate (G).* Located on mounting bracket near control box.

*h Hoist Cylinder Push Arm Caution Plate* the electric motor.

GEAR REDUCER ASSEMBLY
HYDRAULIC
CYLINDER
INTERNAL BELT SCRAPER

*Figure 1. Belt conveyor, right front, three-quarter view.*

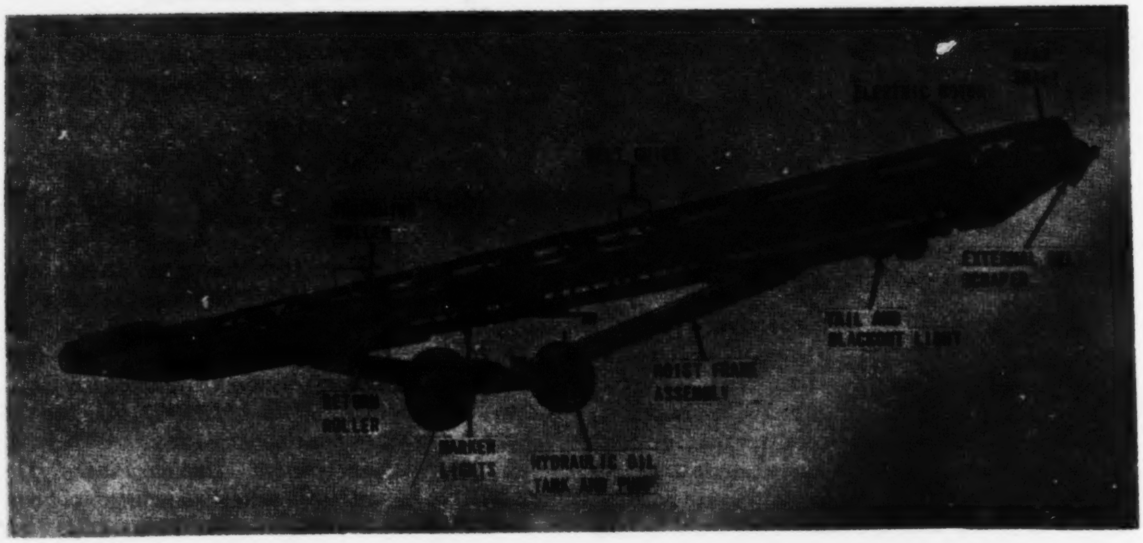
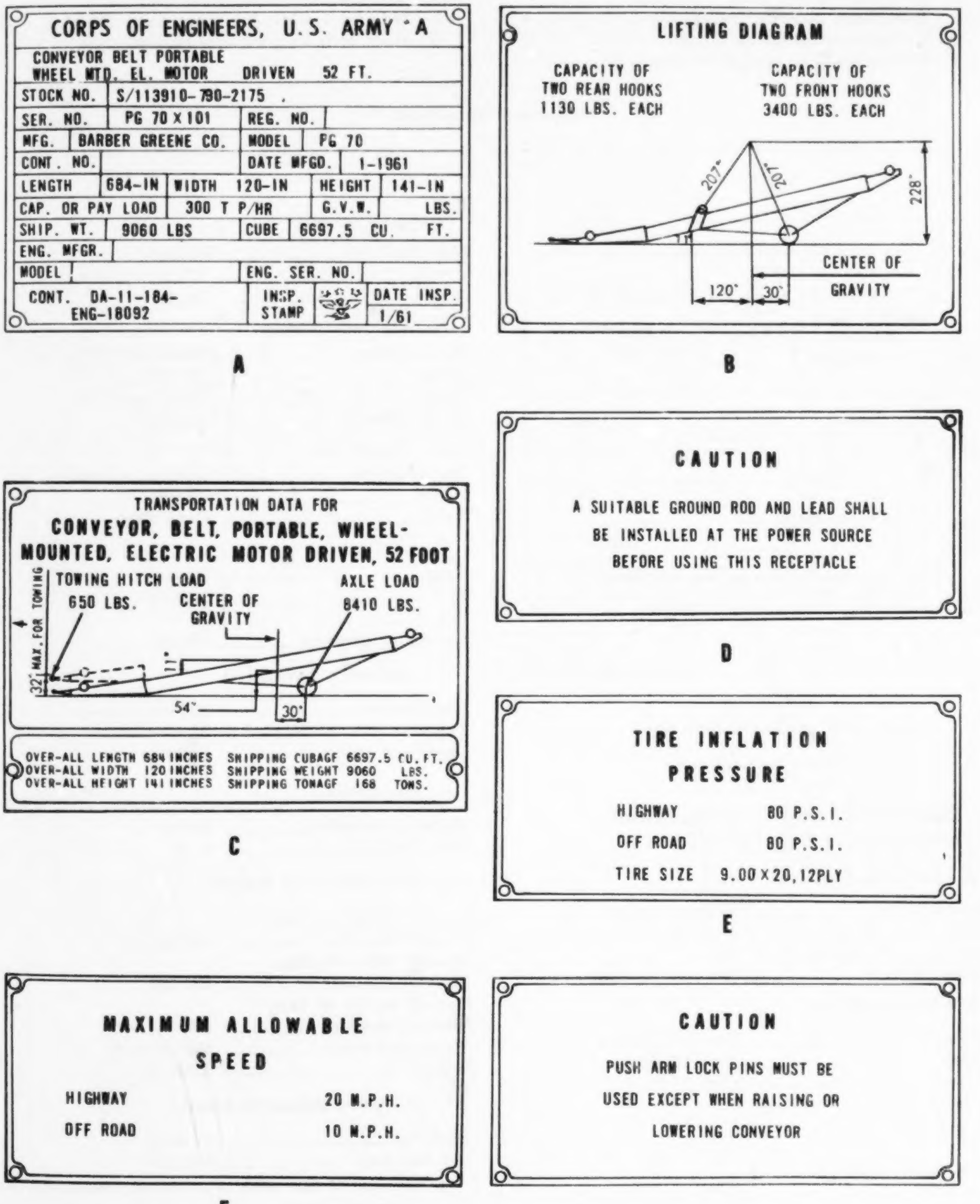

ELECTRIC MOTOR
EXTERNAL BELT
SCRAPER
TAIL AND
BLACKOUT LIGHT
HOIST FRAME
ASSEMBLY
RETURN
ROLLER
MARKER
LIGHTS
HYDRAULIC OIL
TANK AND PUMP

*Figure 2. Belt conveyor, left rear, three-quarter view.*

## 5. Difference in Models

This manual covers only the Barber-Greene Model PG70 belt conveyor. No known unit differences exist for the model covered by this manual.



| CORPS OF ENGINEERS, U.S. ARMY A | | | | | |
|---|---|---|---|---|---|
| CONVEYOR BELT PORTABLE WHEEL MTD. EL. MOTOR DRIVEN 52 FT. | | | | | |
| STOCK NO. | S/113910-790-2175 | | | | |
| SER. NO. | PG 70 X 101 | REG. NO. | | | |
| MFG. | BARBER GREENE CO. | MODEL | PG 70 | | |
| CONT. NO. | | DATE MFGD. | 1-1961 | | |
| LENGTH | 684-IN | WIDTH | 120-IN | HEIGHT | 141-IN |
| CAP. OR PAY LOAD | 300 T P/HR | G.V.W. | LBS. | | |
| SHIP. WT. | 9060 LBS | CUBE | 6697.5 CU. FT. | | |
| ENG. MFGR. | | | | | |
| MODEL | | ENG. SER. NO. | | | |
| CONT. DA-11-184-ENG-18092 | INSP. STAMP | | DATE INSP. 1/61 | | |

A

LIFTING DIAGRAM

CAPACITY OF TWO REAR HOOKS 1130 LBS. EACH

CAPACITY OF TWO FRONT HOOKS 3400 LBS. EACH

B

TRANSPORTATION DATA FOR

CONVEYOR, BELT, PORTABLE, WHEEL-MOUNTED, ELECTRIC MOTOR DRIVEN, 52 FOOT

OVER-ALL LENGTH 684 INCHES SHIPPING CUBAGE 6697.5 CU. FT.
OVER-ALL WIDTH 120 INCHES SHIPPING WEIGHT 9060 LBS.
OVER-ALL HEIGHT 141 INCHES SHIPPING TONAGE 168 TONS.

C

CAUTION

A SUITABLE GROUND ROD AND LEAD SHALL BE INSTALLED AT THE POWER SOURCE BEFORE USING THIS RECEPTACLE

D

TIRE INFLATION PRESSURE

| | |
|---|---|
| HIGHWAY | 80 P.S.I. |
| OFF ROAD | 80 P.S.I. |
| TIRE SIZE | 9.00 X 20, 12PLY |

E

MAXIMUM ALLOWABLE SPEED

| | |
|---|---|
| HIGHWAY | 20 M.P.H. |
| OFF ROAD | 10 M.P.H. |

F

CAUTION

PUSH ARM LOCK PINS MUST BE USED EXCEPT WHEN RAISING OR LOWERING CONVEYOR

G

EMC 3910-202-15/3 ①

*Figure 3. Identification and instruction plates.*

A—Corps of Engineers data plate
B—Lifting diagram instruction plate
C—Transportation data plate
D—Control box ground caution plate
E—Tire inflation instruction plate
F—Maximum allowable speed data plate
G—Hoist cylinder push arm caution plate

*Figure 3—Continued.*

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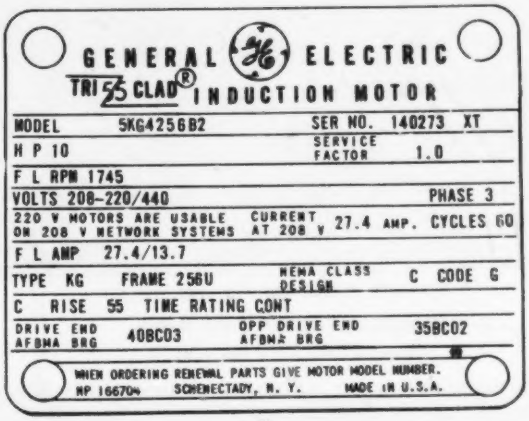


GENERAL ELECTRIC
TRI55CLAD® INDUCTION MOTOR
MODEL 5KG4256B2 SER NO. 140273 XT
H P 10 SERVICE FACTOR 1.0
F L RPM 1745
VOLTS 208-220/440 PHASE 3
220 V MOTORS ARE USABLE ON 208 V NETWORK SYSTEMS CURRENT AT 208 V 27.4 AMP. CYCLES 60
F L AMP 27.4/13.7
TYPE KG FRAME 256U NEMA CLASS DESIGN C CODE G
C RISE 55 TIME RATING CONT
DRIVE END AFBMA BRG 40BC03 OPP DRIVE END AFBMA BRG 35BC02
WHEN ORDERING RENEWAL PARTS GIVE MOTOR MODEL NUMBER.
NP 166704 SCHENECTADY, N. Y. MADE IN U.S.A.

H

EMC 3910-202-15/3 ②

H—Electric motor data plate

*Figure 3—Continued.*

## 6. Operational and Organizational Maintenance Tabulated Data

*a. Belt Conveyor.*

| | |
|---|---|
| Manufacturer | Barber-Greene |
| Model | PG70 |
| Type | Belt |
| Actual delivery | 300 tons per hour |

*b. Electrical Motor.*

| | |
|---|---|
| Manufacturer | General Electric |
| Model | 5KG4256B2 |
| Series | 140273XT |
| Phase | 3 |
| Horsepower | 10 |
| Cycle | 60 |
| RPM (revolutions per minute) | 1,745 |
| Volts | 440 |
| Amperes | 13.7 |

*c. Conveyor Belt.*

| | |
|---|---|
| Manufacturer | Goodyear |
| Length | 107 ft. 4 1/2 in. |
| Width | 24 in. |

*d. Hydraulic Pump.*

| | |
|---|---|
| Manufacturer | Blackhawk Mfg. Co. |
| Model | HP 2506-92-03 |
| Type | Hand operated |
| Rated pressure | 2,500 lb |

*e. Control Box.*

| | |
|---|---|
| Manufacturer | General Electric |
| Model | CR106 |
| Type | C400 CFA |

*f. Tires.*

| | |
|---|---|
| Type | Tube |
| Size | 9.00-20 |
| Ply | 12 |
| Operating pressure | 80 psi |

*g. Hydraulic Cylinder.*

| | |
|---|---|
| Manufacturer | Barber-Greene |
| Type | Single-action |
| Operating pressure | 2,500 lb |

*h. Capacities.*

| | |
|---|---|
| Hydraulic system | 15 qt |
| Drive gearbox | 5 qt |

*i. Dimensions and Weight.*

| | |
|---|---|
| Overall height of unit, wheel mounted | 141 in. |
| Overall width of unit, wheel mounted | 120 in. |
| Overall length of unit, wheel mounted | 684 in. |
| Shipping cubage | 6697.5 cu ft |
| Weight | 9,060 lb |

*j. Maximum Allowable Speed.*

| | |
|---|---|
| Highway | 20 mph |
| Off highway | 10 mph |

*k. Maintenance and Operating Supplies.* Table 1 lists the items necessary for operation of the engine.

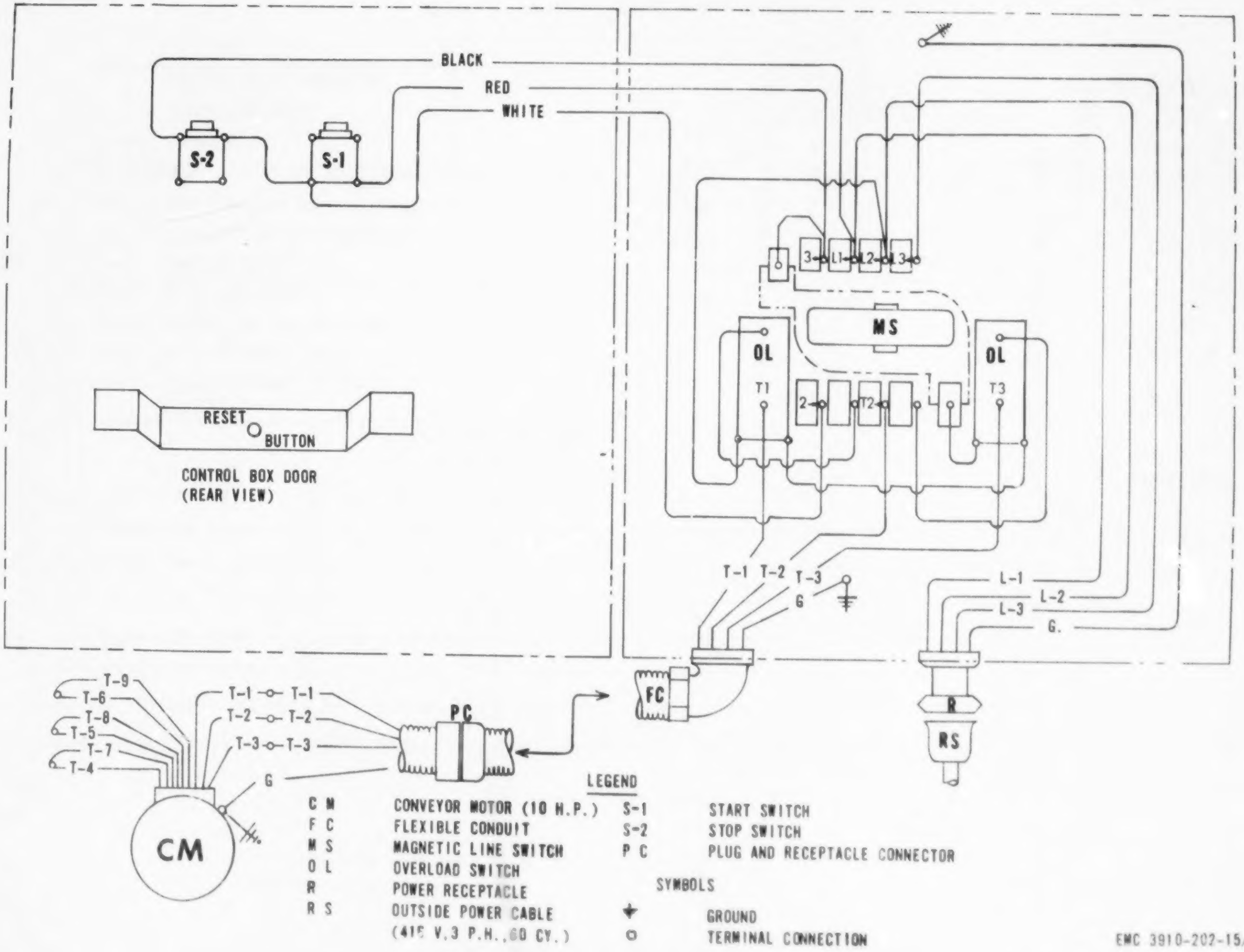

BLACK
RED
WHITE
S-2
S-1
RESET BUTTON
CONTROL BOX DOOR
(REAR VIEW)
3
L1
L2
L3
MS
OL
T1
2
T2
OL
T3
T-1
T-2
T-3
G
L-1
L-2
L-3
G.
R
RS
FC
PC
T-9
T-6
T-8
T-5
T-7
T-4
T-1 T-1
T-2 T-2
T-3 T-3
G
CM
LEGEND
C M CONVEYOR MOTOR (10 H.P.)
F C FLEXIBLE CONDUIT
M S MAGNETIC LINE SWITCH
O L OVERLOAD SWITCH
R POWER RECEPTACLE
R S OUTSIDE POWER CABLE (415 V,3 P.H.,60 CY.)
S-1 START SWITCH
S-2 STOP SWITCH
P C PLUG AND RECEPTACLE CONNECTOR
SYMBOLS
GROUND
TERMINAL CONNECTION
EMC 3910-202-15/4

*Figure 4. Control box and motor wiring diagram.*

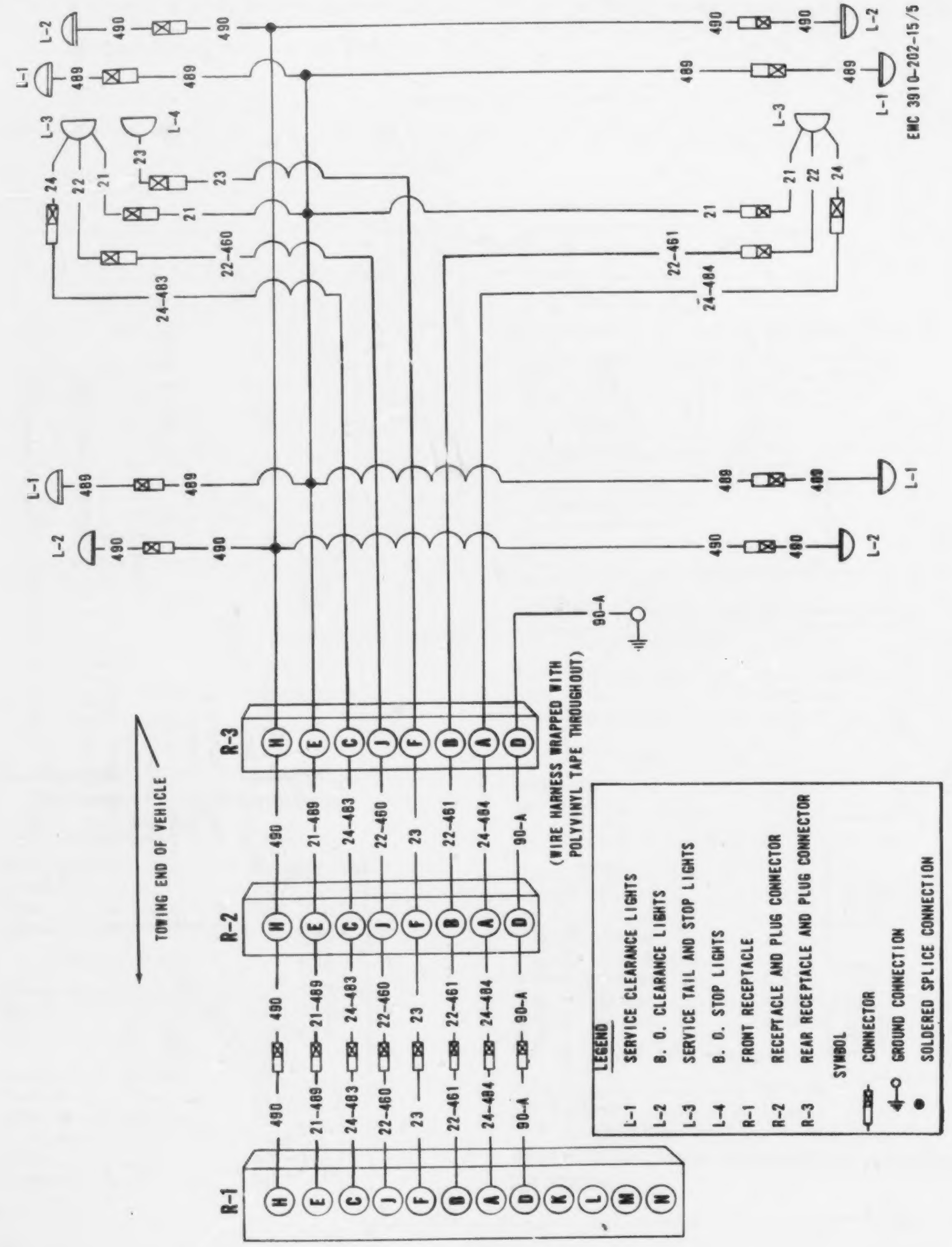
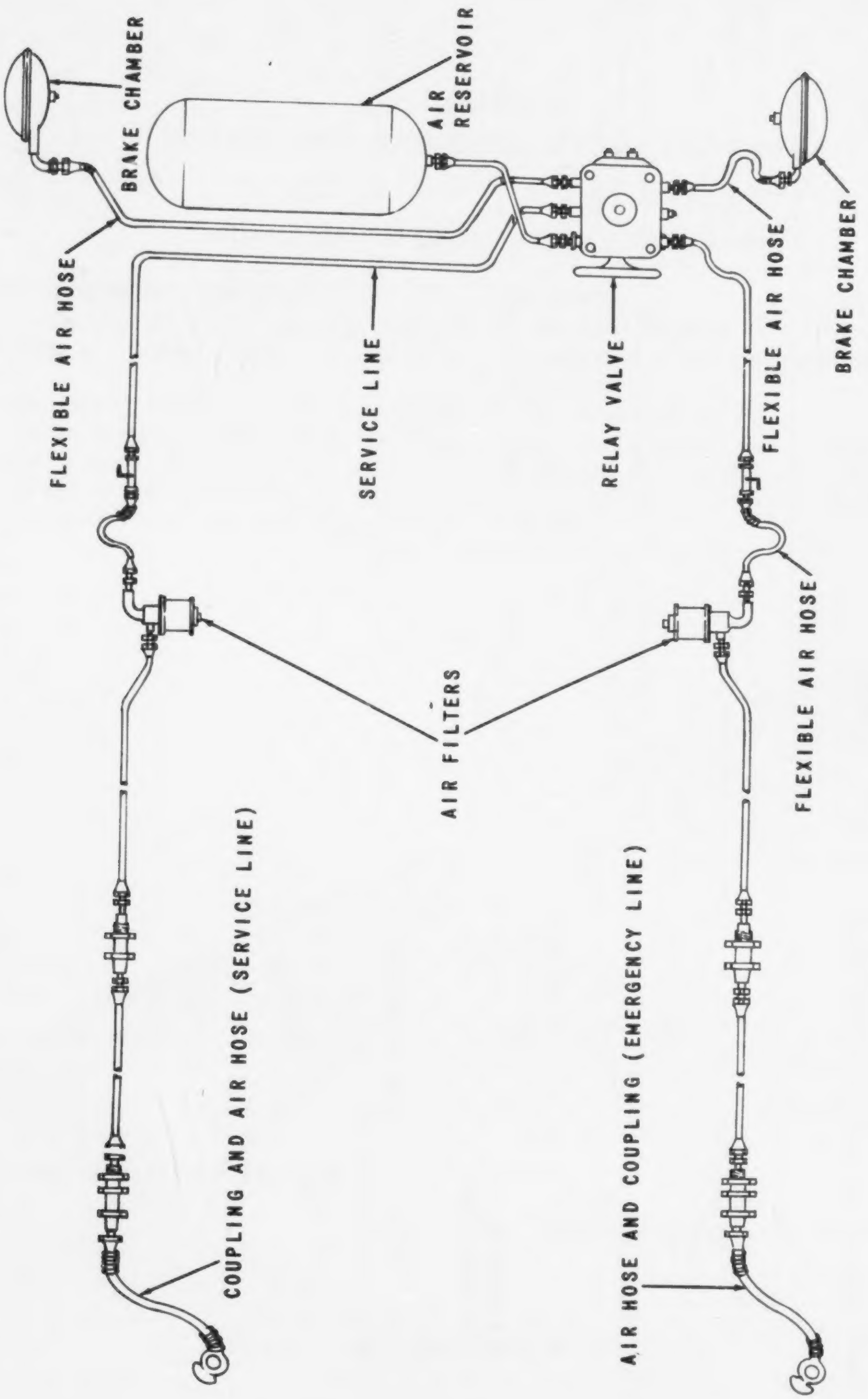

R-1
R-2
R-3
H
E
C
J
F
B
A
D
K
L
M
N
490
21-489
24-483
22-460
23
22-461
24-484
90-A
L-1
L-2
L-3
L-4
489
21
22
24
TOWING END OF VEHICLE
(WIRE HARNESS WRAPPED WITH POLYVINYL TAPE THROUGHOUT)
EMC 3910-202-15/5
LEGEND
L-1 SERVICE CLEARANCE LIGHTS
L-2 B. O. CLEARANCE LIGHTS
L-3 SERVICE TAIL AND STOP LIGHTS
L-4 B. O. STOP LIGHTS
R-1 FRONT RECEPTACLE
R-2 RECEPTACLE AND PLUG CONNECTOR
R-3 REAR RECEPTACLE AND PLUG CONNECTOR
SYMBOL
CONNECTOR
GROUND CONNECTION
SOLDERED SPLICE CONNECTION

*Figure 5. Conveyor chassis wiring diagram.*


BRAKE CHAMBER
AIR RESERVOIR
FLEXIBLE AIR HOSE
SERVICE LINE
RELAY VALVE
FLEXIBLE AIR HOSE
BRAKE CHAMBER
FLEXIBLE AIR HOSE
AIR FILTERS
COUPLING AND AIR HOSE (SERVICE LINE)
AIR HOSE AND COUPLING (EMERGENCY LINE)

EMC 3910-202-15/6

*Figure 6. Air system diagram.*

Table I. *Maintenance and Operating Supplies*

| Item | Component application | Source of supply | Federal stock No. | Description | Quantity required for initial operation | Quantity required for & hours operation | Notes |
|---|---|---|---|---|---|---|---|
| 1 | 4308. —TANK, HYDRAULIC OIL | | | HYDRAULIC FLUID 5 gal can as follows: | 15 qts<br>(3) | (2) | (1) See SM 10–1–C4–1 for additional data and requisitioning procedure. |
| | | 10 | 9150–231–6696(1) | | | | |
| 2 | 7500.2.—BOX, GEAR | | | LUBRICATING OIL 5 gal can as follows: | 5 qts | (2) | (2) See LO 5–3910–202–15 for grade application and replenishment intervals. |
| | | 10 | 9150–577–5844(1) | GO 90 | | | (3) Tank capacity. |
| | | 10 | 9150–257–5440(1) | GOS | | | |
| 3 | FITTINGS, LUBRICATION | | | GREASE, automotive and artillery 5 lb can as follows: | 1 lb | (2) | |
| | | 10 | 9150–190–0905(1) | GAA | | | |

# CHAPTER 2
# INSTALLATION AND OPERATING INSTRUCTIONS

## Section I. SERVICE UPON RECEIPT OF EQUIPMENT

### 7. Unloading of Belt Conveyor

*a. Blocking and Tie-Down Removal.* Remove the blocking and tiedown cables as instructed in figure 7.

*b. Unloading by Crane.* If a crane is available attach cables to the four lifting lugs. Two lugs are located near the top front center of the belt conveyor and the other two lugs are located on the axle frame. Install spreader bars between the cables.

***Caution:*** **Spreader bars must always be used to keep cables from coming in contact with the belt conveyor.**

*c. Unloading by Ramp.* If a crane is not available, construct an unloading ramp as illustrated in figure 8, and tow the belt conveyor from the flatcar, using a suitable towing vehicle.

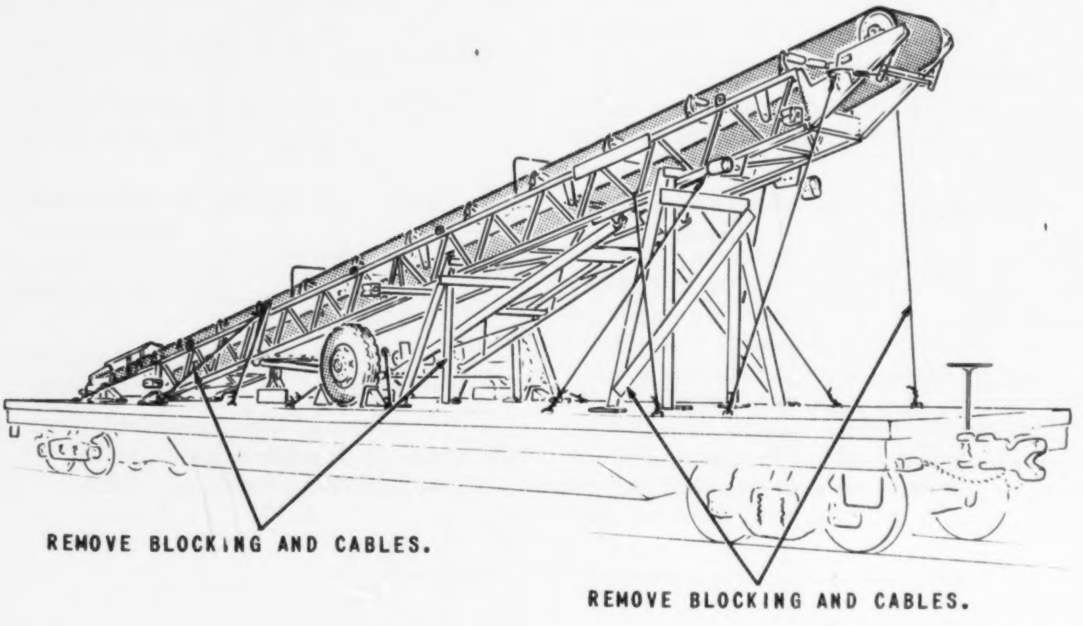
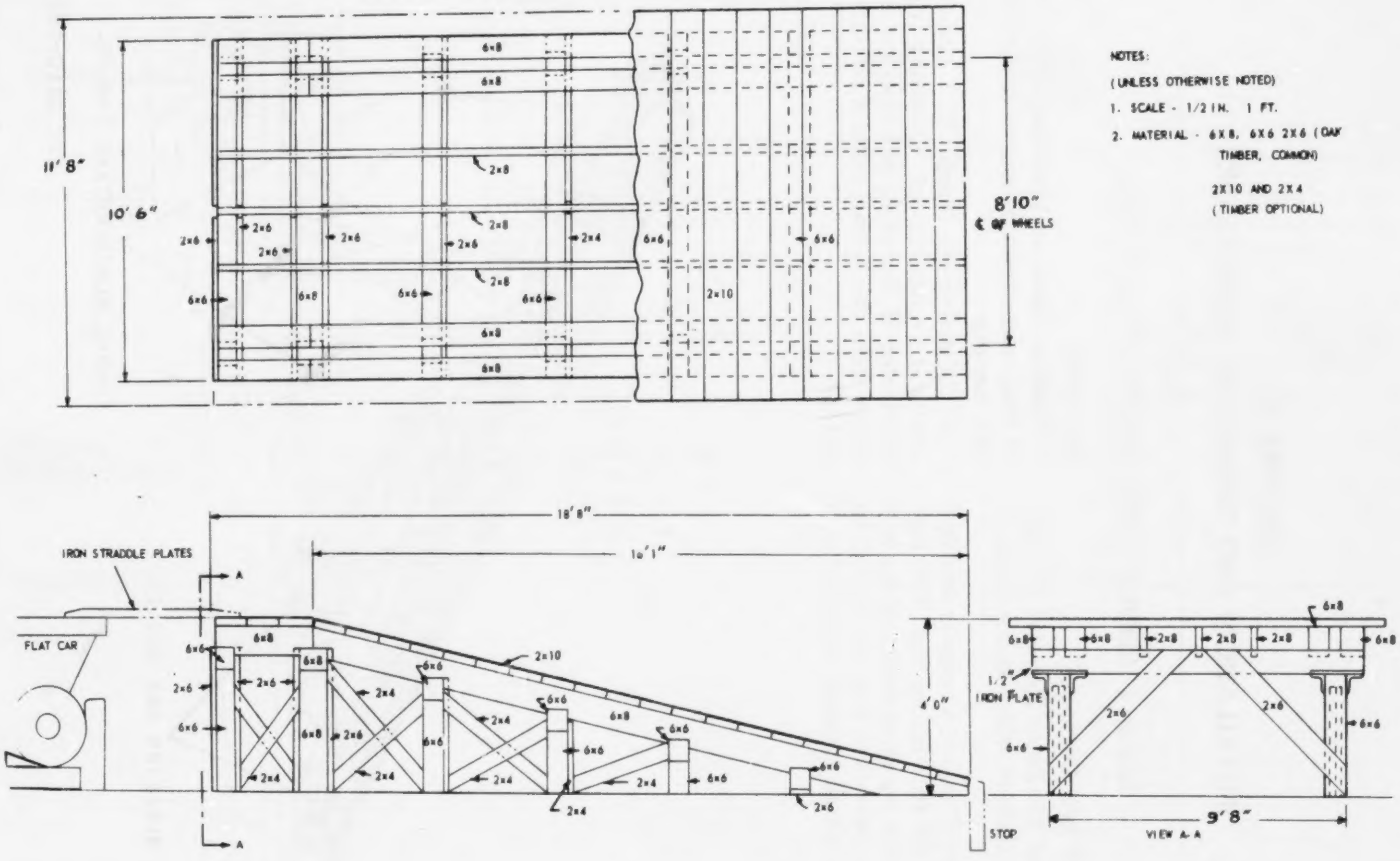


*Figure 7. Belt conveyor loaded for rail shipment.*


11' 8"
10' 6"
8'10"
℄ OF WHEELS
6x8
2x8
2x6
2x4
6x6
2x10
18' 8"
16' 1"
4' 0"
IRON STRADDLE PLATES
FLAT CAR
A
STOP
1/2" IRON PLATE
9' 8"
VIEW A-A

NOTES:
(UNLESS OTHERWISE NOTED)
1. SCALE - 1/2 IN. 1 FT.
2. MATERIAL - 6X8, 6X6 2X6 (OAK TIMBER, COMMON)
2X10 AND 2X4
(TIMBER OPTIONAL)

EMC 3910-202-15/8

*Figure 8. Unloading ramp.*

## 8. Unpacking Equipment

*a. Unpacking.* The belt conveyor is normally shipped completely assembled and processed to meet military specifications.

*b. Removal of Protective Material and Devices.* Prior to placing conveyor in operation, depreservation will be accomplished in accordance with instructions outlined on DA Form 2258, Depreservation Guide of Engineer Equipment, which is attached to the electric control box.

## 9. Inspection of New Equipment

*a.* Perform the before-operation services (par. 39).

*b.* Inspect the entire unit for any damage which may have occurred during shipment.

*c.* Inspect the identification plates to identify the belt conveyor.

*d.* Inspect to see that required publications are with the conveyor.

*e.* Inspect all rollers to see that they rotate freely.

*f.* Inspect all cables and conveyor belt for cuts.

*g.* Inspect all wiring and hoses for cuts and loose connections.

*h.* Inspect the pulley belts for serviceable condition.

*i.* Inspect tightness of all nuts and bolts securing the frame sections together.

## 10. Installation of Separately Packed Components

The belt conveyor is received by the using organization as a selfcontained unit.

## 11. Installation or Setting-up Instructions

*a. Lateral Movement and Chocking.*

(1) When lateral movement is desired, position the wheels as instructed in figure 9.

(2) Chock both tires after desired position is attained.

*b. Power Source.* Attach the power cable to a suitable 440 volt power supply.

***Warning:* Use a suitable grounding rod and connect a ground wire to the conveyor frame. Electrical faults in the power cable, electric motor, and generator equipment could result in death by electrocution from contact with an ungrounded conveyor.**

*c. Elevation.* Elevate the conveyor to the desired position as instructed in figure 10.

*d. Leveling.* Level the belt conveyor as much as possible. Place planking under the wheel on the low side to level conveyor.

## 12. Servicing New Equipment

*a. General.* Perform the before-operation services (par. 39).

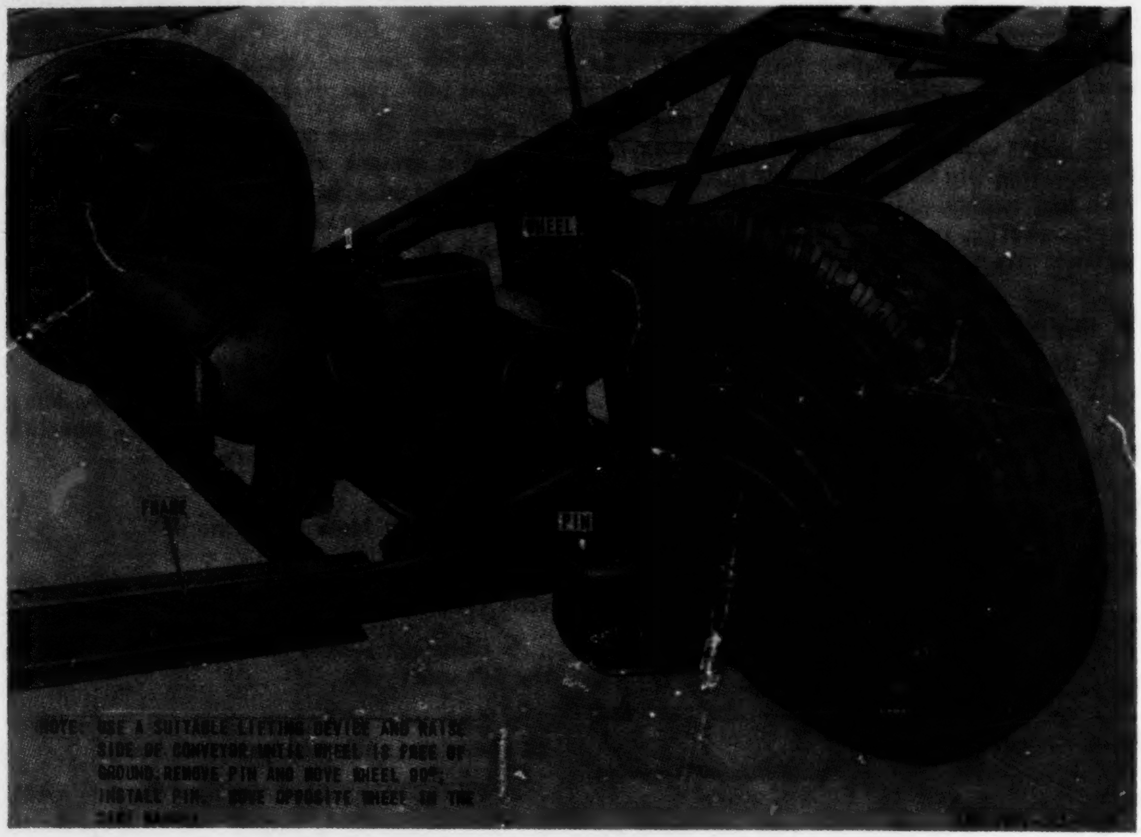
*b. Cleaning.* Remove all foreign matter from the belt conveyor.

*c. Lubrication.* Lubricate the belt conveyor as specified in the lubrication order.

*d. Fire Extinguisher.* Be sure the fire extinguisher is mounted properly and is in operating condition (pars. 29–32).

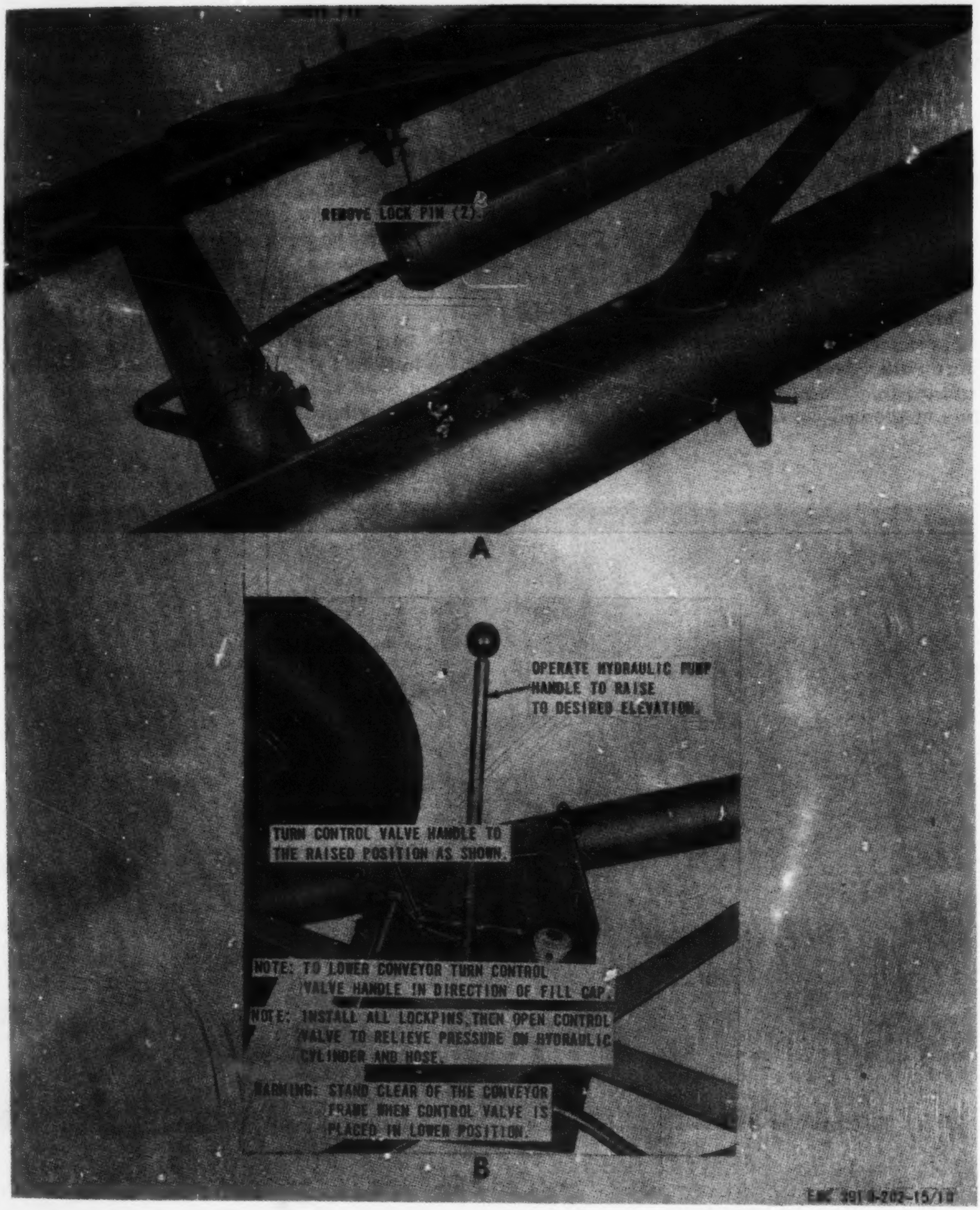
## 13. Inspection and Servicing Used Equipment

Used belt conveyors which have been stored and shipped in conformance with Army specifications are inspected and serviced before use in the same manner as new equipment (pars. 9, 12). Any equipment that has been subjected to use and wear will be cleaned and a careful inspection performed before putting it back into service. Perform each step of the operator's daily servicees (par. 39).



NOTE: USE A SUITABLE LIFTING DEVICE AND RAISE SIDE OF CONVEYOR UNTIL WHEEL IS FREE OF GROUND. REMOVE PIN AND MOVE WHEEL 90°. INSTALL PIN. MOVE OPPOSITE WHEEL IN THE SAME MANNER.

*Figure 9. Lateral movement.*



REMOVE LOCK PIN (2).

OPERATE HYDRAULIC PUMP HANDLE TO RAISE TO DESIRED ELEVATION.

TURN CONTROL VALVE HANDLE TO THE RAISED POSITION AS SHOWN.

NOTE: TO LOWER CONVEYOR TURN CONTROL VALVE HANDLE IN DIRECTION OF FILL CAP.

NOTE: INSTALL ALL LOCKPINS THEN OPEN CONTROL VALVE TO RELIEVE PRESSURE ON HYDRAULIC CYLINDER AND HOSE.

WARNING: STAND CLEAR OF THE CONVEYOR FRAME WHEN CONTROL VALVE IS PLACED IN LOWER POSITION.

A—Lockpin removal B—Pump operation

*Figure 10. Conveyor elevation.*

## Section II. MOVEMENT TO A NEW WORK SITE

### 14. Dismantling for Movement

There is no dismantling necessary for movement to a new work site. Normally movement to a new work site is by towing short distances.

### 15. Reinstallation After Movement to a New Work Site

Move the unit to a new work site and set up as instructed in paragraph 11.

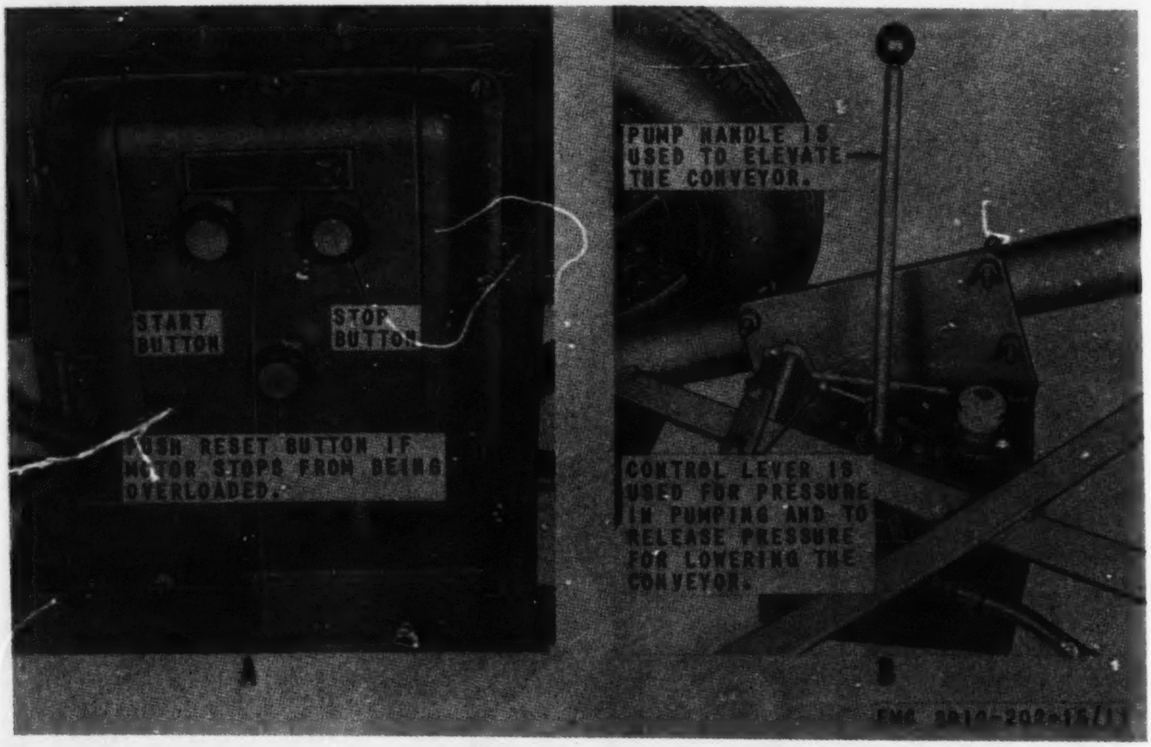
## Section III. CONTROLS AND INSTRUMENTS

### 16. General

This section describes, illustrates, and furnishes the operator, a crew, or driver sufficient information pertaining to the various controls and instruments provided for the proper operation of the belt conveyor.

### 17. Controls and Instruments

The purpose and use of the controls are illustrated in figure 11.


START BUTTON
STOP BUTTON
PUSH RESET BUTTON IF MOTOR STOPS FROM BEING OVERLOADED.
A
PUMP HANDLE IS USED TO ELEVATE THE CONVEYOR.
CONTROL LEVER IS USED FOR PRESSURE IN PUMPING AND TO RELEASE PRESSURE FOR LOWERING THE CONVEYOR.
B
EMC 3910-202-15/11

A—Control box B—Hydraulic pump

*Figure 11. Controls and instruments.*

## Section IV. OPERATION UNDER USUAL CONDITIONS

### 18. General

*a.* The instructions in this section are published for the information and guidance of the personnel responsible for the, opeation of the conveyor Model PG70.

*b.* It is essential that the operator know how to perform every operation of which the conveyor is capable. This section gives instructions on starting and stopping of the electric motor, on the basic motions of the conveyor, and on coordinating the basic motions to perform the specific tasks for which the equipment is designed. Since nearly every job presents a different problem the operator may have to vary the given procedures to fit the individual job.

### 19. Starting the Belt Conveyor

*a.* Perform the before-operation services (par. 39).

*b.* Start the electric motor as illustrated in figure 12.

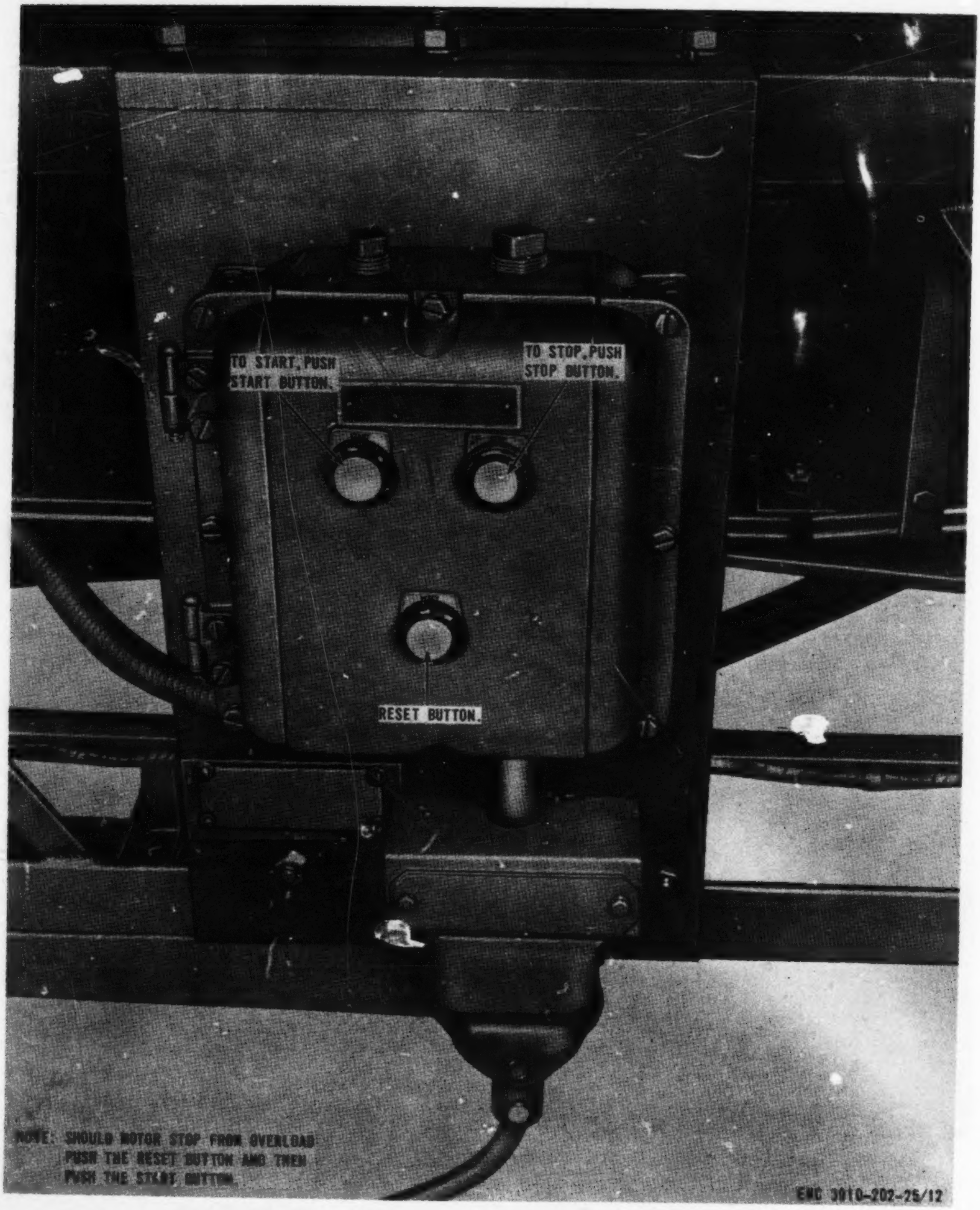
### 20. Stopping the Belt Conveyor

*a.* Stop the electric motor as illustrated in figure 12.

*b.* Perform the after-operation services (par. 39).

### 21. Operating Details

No specific operating instructions are necessary for operation of the belt conveyor other than setting-up instructions given in paragraph 11.


TO START, PUSH START BUTTON.
TO STOP, PUSH STOP BUTTON.
RESET BUTTON.

NOTE: SHOULD MOTOR STOP FROM OVERLOAD PUSH THE RESET BUTTON AND THEN PUSH THE START BUTTON.

ENG 3910-202-25/12

Figure 12. Starting and stopping the belt coveyor.

## Section V OPERATION UNDER UNUSUAL CONDITIONS

### 22. GENERAL

This section contains special operating instructions in addition to those previously covered (par. 21), which are necessary for the proper functioning of the equipment under special conditions, such as extreme heat or cold, rain and humidity, dusty and/or sandy, and salt water areas.

### 23. Operation in Extreme Cold

*a.* To prevent conveyor belt from cracking, run belt 5 to 10 minutes before applying any load to conveyor.

*b.* Perform the before-operation services (par. 39).

### 24. Operation in Extreme Heat

Extreme heat will cause oil and lubricant to drain excessively from metal surfaces. Perform the before-operation services (par. 39) more frequently.

### 25. Operation Under Rainy or Humid Condition

*a.* Keep electrical components, connectors, an wiring clean and dry.

*b.* Drain water from air tank frequently to compensate for condensation.

### 26. Operation in Dusty or Sandy Areas

*a.* Keep conveyor clean.

*b.* Shield the motor, control box, and hydraulic system from blowing sand and/or dust.

### 27. Operation in Salt Water Areas

*a.* Wash salt deposits from conveyor. Dry all electrical wiring and connections.

*b.* Coat all finished machined, unpainted parts with lubricant.

*c.* Check closely for corrosion and, when painting is required, report the condition to organizational maintenance.

### 28. Fording

After conveyor has been forded across a stream or body of water, clean the conveyor thoroughly, dry all electrical wiring and connections, and perform the before-operation services (par. 39). Lubricate the conveyor (LO 5-3910-202-15).

## Section VI. OPERATION OF AUXILIARY MATERIEL USED IN CONJUNCTION WITH THE BELT CONVEYOR

### 29. Fire Extinguisher Description

The monobromotrifluoromethane type fire extinguisher used with the conveyor replaces the carbon dioxide and carbon tetrachloride type fire extinguishers used in the past. It is generally suitable for use on all types of fire, with exception of fires involved with LOX (liquid oxygen) generating equipment. The fire extinguisher is furnished with a disposable type cylinder.

### 30. Operation

To operate the fire extinguisher, perform the following operations:

*a.* Remove fire extinguisher from its location.

*b.* Break the seal by pulling the safety pin from the handle.

*c.* Poin the horn at the base of the flame.

*d.* Depress trigger for discharge and direct the stream of contents at the base of the fire.

***Warning:* Avoid breathing of smoke.**

*e.* Replace with new cylinder immediately after using.

### 31. Replacement of Cylinder

To replace with new cylinder, perform the following operations:

*a.* Press lever to release pressure from old cylinder.

*b.* Loosen swivel valve coupling nut and remove the valve assembly from used cylinder.

*c.* Remove instruction band from used cylinder.

*d.* Place new cylinder through the instruction band.

*e*. Replace safety pin in valve and steal pin with seal wire.

*f*. Attach valve assembly and tighten swivel coupling nut on the new cylinder and replace fire extinguisher in mounting bracket.

*g*. Adjust instruction band on cylinder to show maintenance and operating instructions.

### 32. Maintenance N

Weigh fire extinguisher every six months and replace cylinder if gross weight has decreased 4 ounces or more. Lubricate cylinder neck threads with one drop of OE 30 oil before reassembly.

# CHAPTER 3

# OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

## Section I. OPERATOR AND ORGANIZATIONAL MAINTENANCE TOOLS AND EQUIPMENT

### 33. Special Tools and Equipment

No special tools and equipment are needed by the operator or organizational maintenance personnel for maintaining the belt conveyor.

### 34. Basic Issue Tools and Equipment

Tools and equipment issued with or authorize for the belt conveyor are listed in Appendix II, Basic Issue Items List.

### 35. Organizational Maintenance Repair Parts

Organizational maintenance repair parts are listed and illustrated in TM 5–3910–202–25P.

## Section II. LUBRICATION

### 36. General Lubrication Information

*a.* This section contains a reproduction of the lubrication order, LO 5–3910–202–15, and lubrication instructions which are supplemental to, and are not specifically covered in the lubrication order.

*b.* The lubrication order shown in figure 13 is an exact reproduction of the approved lubrication order for the belt conveyor. For current lubrication order for the belt conveyor. For current lubrication order, always refer to DA Pam 310–4.

### 37. Detailed Lubrication Information

*a. Care of Lubricants.* Keep all lubricants in closed containers and stored in a clean, dry area, away from heat. Do not allow heat, dirt, dust, water, or other foreign matter to come in contact at any time.

*b. Cleaning.* Wipe clean all grease fittings on areas around filler caps and drain plugs. After every lubrication, remove any excess or spilled lubricant.

*c. Points of Application.* Point requiring lubrication are illustrated for reference in figure 13. Apply the lubricant designated and follow the detailed instruction in LO 5–3910–202–15.

*d. Special Lubrication Instructions for Unusual Conditions.* The intervals will be more frequent when operating the belt conveyor in dust or sand, rainy or humid, salt water areas, ford or under any conditions which tend to destroy the protective quality or quantity of the lubricant.

*e. Wheel Bearings.*

(1) Remove the wheel bearings (par. 93).

(2) Clean and inspect the wheel bearings (par. 93).

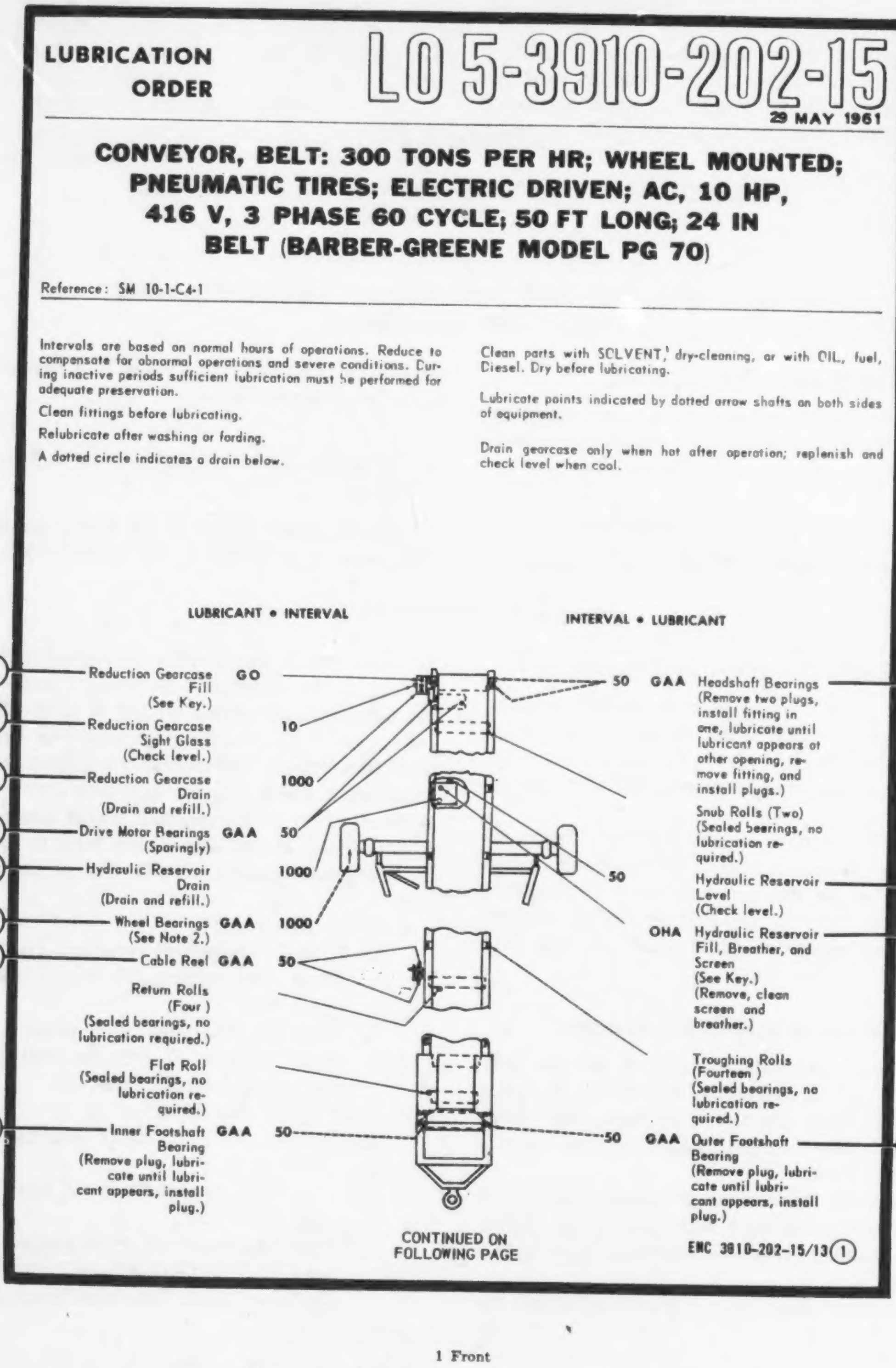
(3) Pack the bearings with proper lubricant (LO 5–3910–202–15) and install the wheel bearing (par. 93).

*f. Head Shaft Bearings.*

(1) Remove the head shaft bearings (par. 125).

(2) Clean and inspect the head shaft bearings (par. 126).

(3) Pack the bearings with proper lubricant (LO 5–3910–202–15) and install the head shaft bearings (par. 127).



**LUBRICATION ORDER**

# LO 5-3910-202-15

29 MAY 1961

## CONVEYOR, BELT: 300 TONS PER HR; WHEEL MOUNTED; PNEUMATIC TIRES; ELECTRIC DRIVEN; AC, 10 HP, 416 V, 3 PHASE 60 CYCLE; 50 FT LONG; 24 IN BELT (BARBER-GREENE MODEL PG 70)

Reference: SM 10-1-C4-1

Intervals are based on normal hours of operations. Reduce to compensate for abnormal operations and severe conditions. During inactive periods sufficient lubrication must be performed for adequate preservation.

Clean fittings before lubricating.

Relubricate after washing or fording.

A dotted circle indicates a drain below.

Clean parts with SOLVENT,[1] dry-cleaning, or with OIL, fuel, Diesel. Dry before lubricating.

Lubricate points indicated by dotted arrow shafts on both sides of equipment.

Drain gearcase only when hot after operation; replenish and check level when cool.

|  |  | LUBRICANT | INTERVAL |
|---|---|---|---|
| ① | Reduction Gearcase Fill (See Key.) | GO |  |
| ② | Reduction Gearcase Sight Glass (Check level.) |  | 10 |
| ③ | Reduction Gearcase Drain (Drain and refill.) |  | 1000 |
| ④ | Drive Motor Bearings (Sparingly) | GAA | 50 |
| ⑤ | Hydraulic Reservoir Drain (Drain and refill.) |  | 1000 |
| ⑥ | Wheel Bearings (See Note 2.) | GAA | 1000 |
| ⑦ | Cable Reel | GAA | 50 |
|  | Return Rolls (Four ) (Sealed bearings, no lubrication required.) |  |  |
|  | Flat Roll (Sealed bearings, no lubrication required.) |  |  |
| ⑧ | Inner Footshaft Bearing (Remove plug, lubricate until lubricant appears, install plug.) | GAA | 50 |

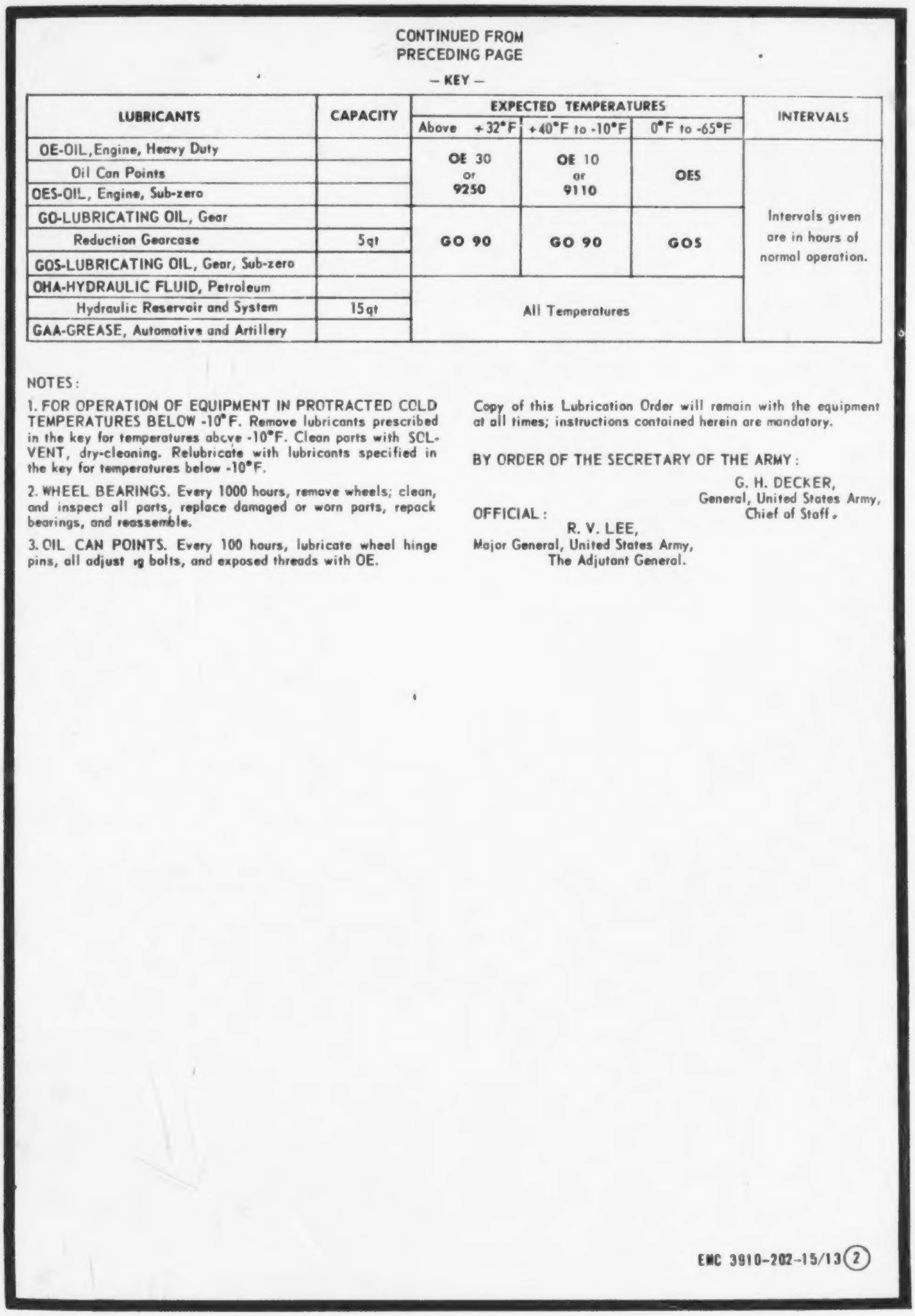
| INTERVAL | LUBRICANT |  |  |
|---|---|---|---|
| 50 | GAA | Headshaft Bearings (Remove two plugs, install fitting in one, lubricate until lubricant appears at other opening, remove fitting, and install plugs.) | ⑨ |
|  |  | Snub Rolls (Two) (Sealed bearings, no lubrication required.) |  |
| 50 |  | Hydraulic Reservoir Level (Check level.) | ⑩ |
|  | OHA | Hydraulic Reservoir Fill, Breather, and Screen (See Key.) (Remove, clean screen and breather.) | ⑪ |
|  |  | Troughing Rolls (Fourteen ) (Sealed bearings, no lubrication required.) |  |
| 50 | GAA | Outer Footshaft Bearing (Remove plug, lubricate until lubricant appears, install plug.) | ⑫ |

CONTINUED ON FOLLOWING PAGE

ENC 3910-202-15/13①

1 Front

*Figure 13. Lubrication order LO 5–3910–2–2–15.*



CONTINUED FROM
PRECEDING PAGE

— KEY —

| LUBRICANTS | CAPACITY | EXPECTED TEMPERATURES | | | INTERVALS |
|---|---|---|---|---|---|
| | | Above +32°F | +40°F to -10°F | 0°F to -65°F | |
| OE-OIL, Engine, Heavy Duty | | OE 30<br>or<br>9250 | OE 10<br>or<br>9110 | OES | Intervals given are in hours of normal operation. |
| Oil Can Points | | | | | |
| OES-OIL, Engine, Sub-zero | | | | | |
| GO-LUBRICATING OIL, Gear | | GO 90 | GO 90 | GOS | |
| Reduction Gearcase | 5qt | | | | |
| GOS-LUBRICATING OIL, Gear, Sub-zero | | | | | |
| OHA-HYDRAULIC FLUID, Petroleum | | All Temperatures | | | |
| Hydraulic Reservoir and System | 15qt | | | | |
| GAA-GREASE, Automotive and Artillery | | | | | |

NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW -10°F. Remove lubricants prescribed in the key for temperatures above -10°F. Clean parts with SOLVENT, dry-cleaning. Relubricate with lubricants specified in the key for temperatures below -10°F.

2. WHEEL BEARINGS. Every 1000 hours, remove wheels; clean, and inspect all parts, replace damaged or worn parts, repack bearings, and reassemble.

3. OIL CAN POINTS. Every 100 hours, lubricate wheel hinge pins, all adjusting bolts, and exposed threads with OE.

Copy of this Lubrication Order will remain with the equipment at all times; instructions contained herein are mandatory.

BY ORDER OF THE SECRETARY OF THE ARMY:

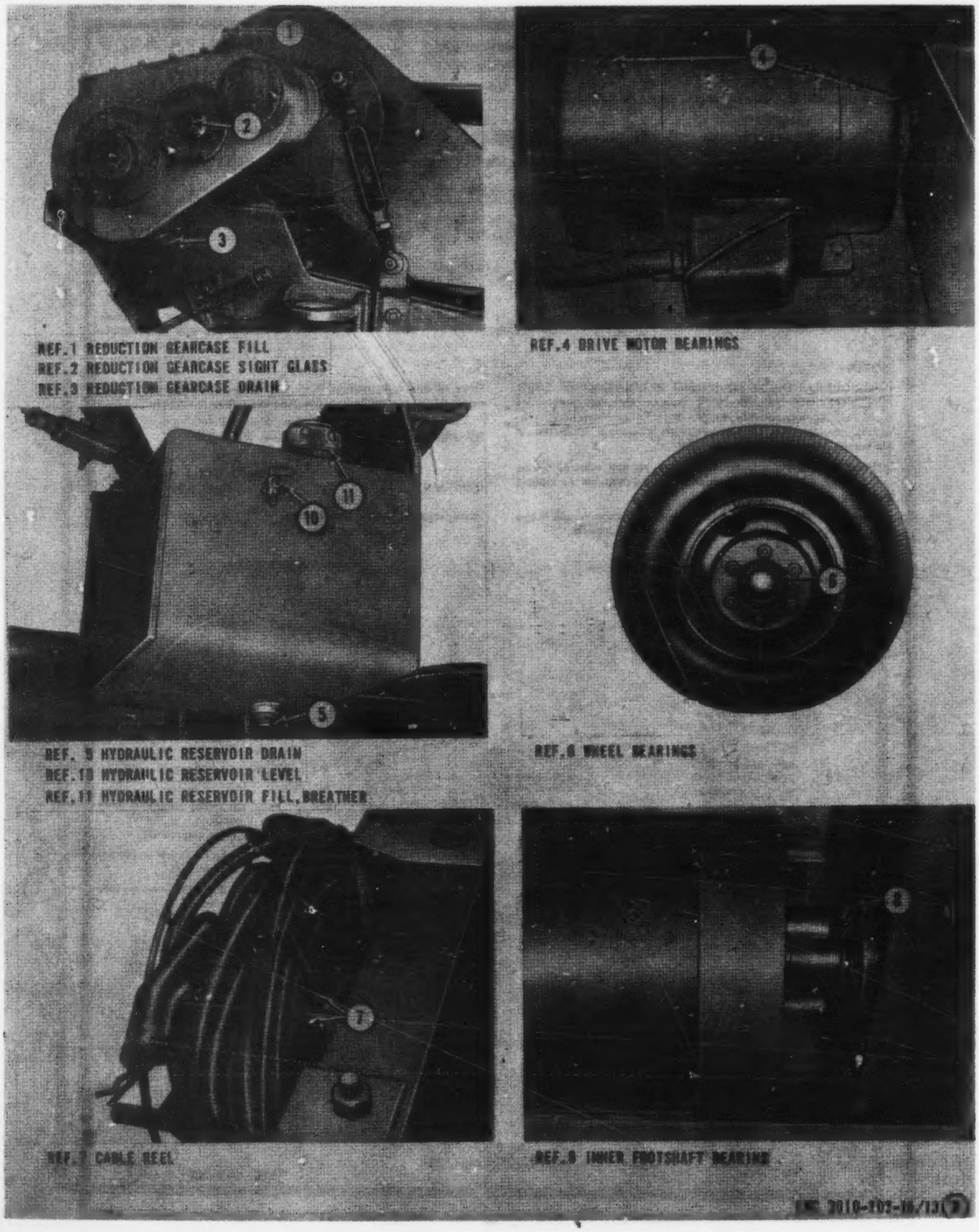
G. H. DECKER,
General, United States Army,
Chief of Staff.

OFFICIAL:
R. V. LEE,
Major General, United States Army,
The Adjutant General.

EMC 3910-202-15/13②

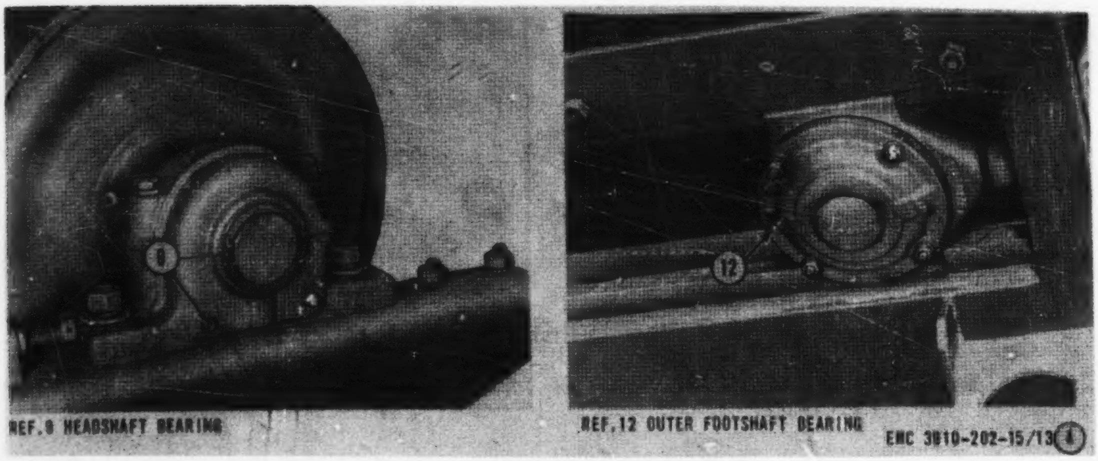
2 Back

*Figure 13 Continued.*


1
2
3
REF.1 REDUCTION GEARCASE FILL
REF.2 REDUCTION GEARCASE SIGHT GLASS
REF.3 REDUCTION GEARCASE DRAIN
4
REF.4 DRIVE MOTOR BEARINGS
11
10
5
REF. 5 HYDRAULIC RESERVOIR DRAIN
REF.10 HYDRAULIC RESERVOIR LEVEL
REF.11 HYDRAULIC RESERVOIR FILL,BREATHER
6
REF.6 WHEEL BEARINGS
7
REF.7 CABLE REEL
8
REF.8 INNER FOOTSHAFT BEARING
3910-202-15/13 (3)

3 Reference 1 through 8, 10, and 11

Figure 13—Continued.



4 References 9 and 12
*Figure 13 Continued.*

*g. Foot Shaft Bearings.*

(1) Remove the foot shaft bearings (par. 128).

(2) Clean and inspect the foot shaft bearings (par. 129).

(3) Lubricate the bearings with proper lubricant (LO 5–3910–202–15) and install the foot shaft bearings (par. 130).

## Section III. PREVENTIVE MAINTENANCE SERVICES

### 38. General

To insure that the equipment is ready for operation at all times, it must be inspected systematically before operation, during operation, and after operation, so that defects may be discovered and corrected before they result in serious damage services will be performed before operation. Defects discovered during operation of the unit will be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed during operation which would damage the equipment if operation were continued. After operation services will be preformed by the operator after every operating period. After-operation services will be preformed at intervals based on the normal operations of the equipment. Reduce interval to compensate for abnormal conditions. Defects or unsatisfactory operating characteristics beyond the scope of the operator to correct must be reported at the earliest opportunity to organizational maintenance. Responsibility for performance of preventive maintenance services rests not only with the operator, but with the entire chain of command from section chief to commanding officer (AR 750–5).

### 39. Operator's Daily Service

*a. General.* The intervals at which the operators daily services are to be performed are indicated by an X in the appropriate column on the small tab located at the bottom of each illustration in figure 14. The tab columns are B (before, D (during), and A (after) operation of the conveyor. The intervals and services not illustrated are prescribed in b, c, and d bedow.

*b. Before-Operation Services.*

(1) *Visual inspection.* Make a general inspection of the entire conveyor for cracked or broken parts, and loose or missing hardware. Make sure that accesories are mounte securely. Inspect all lines and hoses for excessive wear. Inspect the electrical cables for cuts, damaged connectors, or other damage.

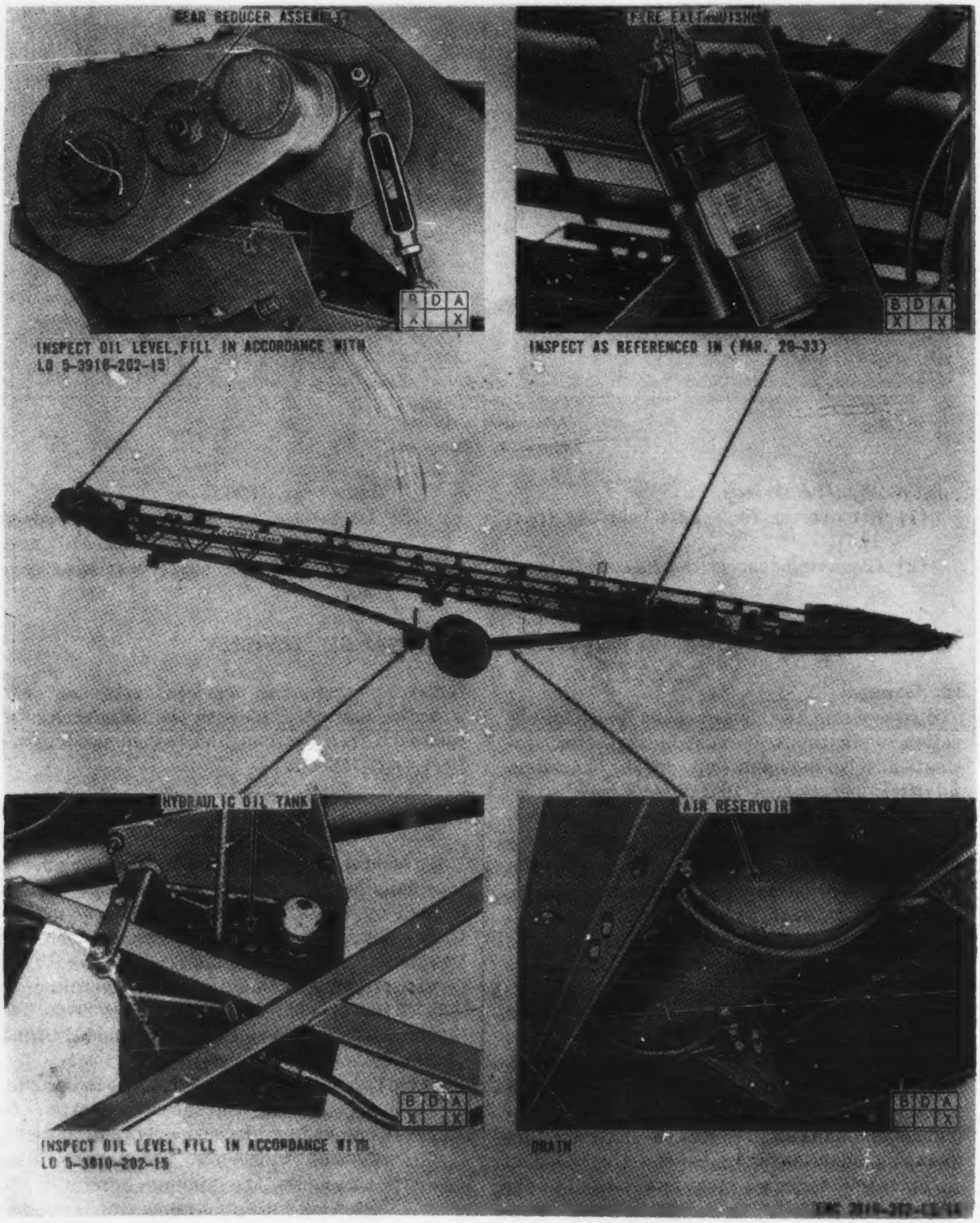

GEAR REDUCER ASSEMBLY
B D A
X X
INSPECT OIL LEVEL, FILL IN ACCORDANCE WITH LO 5-3910-202-15
FIRE EXTINGUISHER
B D A
X X
INSPECT AS REFERENCED IN (PAR. 28-33)
HYDRAULIC OIL TANK
B D A
X X
INSPECT OIL LEVEL, FILL IN ACCORDANCE WITH LO 5-3910-202-15
AIR RESERVOIR
B D A
X
DRAIN
EMC 3910-202-15/14

Figure 14. Operator's daily services.

(2) *Lubrication.* Lubricate in accordance with LO 5–3910–202–15.

(3) *Operations publications.* See that all authorized forms, manuals, and publications are on or with the conveyor and in serviceable condition.

(4) *Leaks.* Inspect the gearbox, hydraulic oil tank, and hydraulic oil hose for leaks. Look for evidence of leaks under the conveyor assembly.

(5) *Cleaning.* Remove all excessive dirt or grease from the motor and remove any accumulated mud or dirt from the remainder of the conveyor..

(6) *Tools and equipment.* See that all tools and equipment assigned to the conveyor are serviceable, clean, and properly stowed or mounted.

(7) *Tires.* Inspect tires for cuts and excessive wear. Check pressure. Desired pressure is 80 psi.

*c. During Operation Services.*

(1) *Visual inspection.* Make a general inspection of the entire conveyor for cracked or broken parts and loose or missing hardware. Make sure all accessories are mounted securely. Inspect all lines and hoses for damage and excessive wear.

(2) *Leaks.* Inspect the gearbox, hydraulic oil tank, and hydraulic oil hose for leaks under the conveyor assembly.

(3) *Unusual operation or noise.* Check for unusual operation such as vibration, loss of capacity to convey, or overheating of the motor. If any deficiencies that would cause further damage to the conveyor are noticed, stop the unit (par. 20) and correct or report the condition to organizational maintenance.

*d. After-Operation Services.*

(1) *Visual inspection.* Make a general inspection of the entire conveyor for cracked or broken parts and loose or missing hardware. Make sure that all accessories are mounted securely. Inspect all lines and hoses for damage and excessive wear.

(2) *Leaks.* Inspect the gearbox, hydraulic oil tank, and hydraulic oil hose for leaks. Look for evidence of leaks under the conveyor assembly.

(3) *Cleaning.* Remove all excessive dirt or grease from the motor and remove any accumulated mud or dirt from the remainder of the conveyor.

(4) *Tools and equipment.* See that all tools and equipment assigned to the conveyor are serviceable clean, and properly stowed or mounted.

(5) *Tires.* Inspect tires for cuts and excessive wear. Check for proper air pressure.

(6) *Drive belts.* Inspect drive belts for excessive wear and proper tension.

(7) *Lights and reflectors.* Inspect all lights and reflectors for cracked or broken lenses.

(8) *Protection.* Protect the conveyor assembly from weather and damage by sheltering, if possible. Keep the conveyor, when not in operation, covered with a tarpaulin or other suitable covering, if possible.

## 40. Organizational Maintenance

*a.* Preventive maintenance is performed by organizational maintenance at quarterly intervals. A quarterly interval is equivalent to three calendar months or a minimum of 250 hours of use, whichever occurs first.

*b.* The preventive maintenance services to be performed at quarterly intervals are listed and described in paragraph 41. The number opposite each service refers to a corresponding number DA FORM 464 and indicates the services' to be performed. The number listed under Inspection indicates the minimum inspection requirements for the equipment.

## 41. Quarterly Preventive Maintenance Services

| Inspection | Service quarterly | GENERAL |
|---|---|---|
| 1 | 1 | *Before-operation services.* Inspect and perform services listed in daily before-operation services (par. 39). |

| Inspection | Service quarterly | GENERAL |
|---|---|---|
| 2 | 2 | *Lubrication.* Inspect the entire conveyor for missing or damaged lubrication fittings and for indications of insufficient lubrication. Inspect wheel bearing oil seals for leaks. |
|  | 2 | Lubricate the conveyor as specified in 5-3910-202-15). |
| 3 | 3 | *Tools and Equipment.* See that the tools and equipment are clean and serviceable. |
| 4 | 4 | *Fire extinguisher.* Check the fire extinguisher for full charge and secure mounting. Check for any signs of corrosion on its exterior surfaces. |
|  | 4 | Recharge or replace the extinguisher (par. 31). Clean the extinguisher. |
| 5 | 5 | *Publications.* See that a copy of this manual (TM 5-3910-202-15), the current lubrication order, and standard DA Form 285 (Accident Report of Individual Accident) are on or with the conveyor, and are in serviceable condition. |
| 6 | 6 | *Appearance.* Inspect the general appearance of the conveyor, paying particular attention to cleanness, legibility of identification marks, and condition of paint. |
|  | 6 | Correct or report deficiencies to filed maintenance. |
|  |  | CONVEYOR |
| 87 | 87 | *Rollers and mounting brackets (For Conveyor Belt).* Inspect the rollers for improper operation and damage. Inspect mounting brackets for loose bolts and alinement, and other damage. |
|  | 87 | Replace defective rollers, mounting brackets, and bolts (pars. 58–61). |
| 104 | 104 | *Shaft, bearing, and gearcase assemblies.* Inspect for leaks, broken case, and other damage. Inspect gearbox oil seals for leaking. |
|  | 104 | Replace damaged and unserviceable assemblies (par. 56). Tighten loose hardware. Replace defective seals (par. 132). |
| 129 | 129 | *Belts, pulleys.* Inspect belts for frayed or worn condition and other damage. Inspect pulleys for improper alinement and damage. |
|  | 129 | Replace belts and pulleys and tighten hardware (pars. 53, 54). |

| Inspection | Service quarterly | GENERAL |
|---|---|---|
|  |  | WRITE-IN SECTION |
| 217 | 217 | *Flow control.* Inspect for proper operation and mounting. |
|  | 217 | Replace defective flow control valve (par. 74). Tighten mounting components. |
| 218 | 218 | *Cylinder, Hydraulic.* Inspect for leaks, proper operation, and mounting. |
|  | 218 | Replace defective cylinder (par. 75). Tighten mounting components. |
| 219 | 219 | *Pump housing, reserve tank and valve assembly.* Inspect for cracks, leaks, improper operation, and other damage. |
|  | 219 | Replace pump housing, tank, and valve assembly (pars. 74, 76). Tighten mounting hardware. |
| 220 | 220 | *Hose and connections.* Inspect hose for damage, cracks, leaks. Inspect connections for damage and leaks. |
|  | 220 | Replace unserviceable hose and connections (par. 74). Tighten all connections and mounting hardware. |
| 221 | 221 | *Lights, wiring, connections, and mountings.* Inspect for frayed or cracked insulation and for unserviceable or damaged lights, wiring, connections, and mountings. |
|  | 221 | Replace unserviceable lights or damaged lights, wiring, connections, and mountings (pars 84–86). Tighten loose mounting hardware. |
| 222 | 222 | *Relay valve and connections.* Inspect valve assembly for proper operation. Inspect for leaks and damaged lines and connections. |
|  | 222 | Replace unserviceable valve, lines, or connections (par. 89). Tighten loose mounting hardware. |
| 223 | 223 | *Hose, couplings, connections.* Inspect hose for cracks, leaks and damage. Inspect couplings and connections for damage. |
|  | 223 | Replace hose, couplings, and connections (par. 90). Tighten loose hardware. |
| 224 | 224 | *Tires.* Inspect tires for proper inflation, excessive wear, breaks, cracks, and other damage. |
|  | 224 | Inflate the tires to 80 psi. Replace defective tires (par. 92). |
| 225 | 225 | *Tow hitch, lunette, mounting attachments.* Inspect pintle for wear, breaks, cracks, and other damage. Inspect mounting attachments and tow hitch for damage. |

| Inspection | Service quarterly | GENERAL |
|---|---|---|
| | 225 | Replace defective lunette, hitch, and mounting attachments (pars. 64, 66). Tighten loose hardware. |
| 226 | 226 | *Wheel bearings, mountings.* Inspect bearings, mountings for breaks, cracks and damage. Inspect seals for leaks and damage. |
| | 226 | Replace bearings, seals, mountings (par. 93). |
| 227 | 227 | *Frame assembly.* Inspect frame assembly for cracks, broken welds, loose bolts, and improper alinement. |
| | 227 | Aline, weld cracks, or tighten bolts as necessary. |
| 228 | 228 | *Axle assembly.* Inspect axle assembly for cracks, breaks, and other damage. |
| | 228 | Replace assembly (par. 100). Tighten loose mountings. |
| 229 | 229 | *Service brakes.* Inspect the brakedrum and shoes for cracks, excessive wear, and other damage. |
| | 229 | Replace defective and unserviceable parts (pars. 94, 95). |
| 230 | 230 | *Brake air reservoir, valves, lines, mountings.* Inspect air reservoir, lines, and valves for leaks and damage. Inspect mountings for loose bolts and damage. |

| Inspection | Service quarterly | GENERAL |
|---|---|---|
| | 230 | Replace reservoir, lines, valves, and mountings (pars. 89, 90). Tighten loose hardware. |
| | | SPECIAL EQUIPMENT |
| 231 | 231 | *Motor 220/240 volts general electric.* Inspect motor for proper operation, cleanness, and damage. |
| | 231 | Replace motor, aline and tighten component hardware (par. 81). |
| | | ***Caution:*** **Disconnect power at control box before making any repairs and/or replacements.** |
| 232 | 232 | *Electric control box switch, receptacle, and wiring 220/440 volts.* Inspect for proper operation, loose connections, and hardware. |
| | 232 | Replace a defective switch and tighten all loose connections and hardware (par. 80). |
| 233 | 233 | *Reflector.* Inspect for broken and damaged reflector. |
| | 233 | Replace a defective reflector (par. 86). Tighten loose hardware. |
| 234 | 234 | *Safety chain.* Inspect safety chain for damage. |
| | 234 | Replace broken or damaged chain (par. 65). Tighten loose hardware. |

## Section IV. TROUBLESHOOTING

### 42. General

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the belt conveyor and its components. Each trouble symptom stated is followed by a list of probable causes of the trouble. The possible remedy recommended is described opposite the probable cause. Any operational trouble that is beyond the scope of organizational maintenance must be reported to field maintenance, 3d echelon.

### 43. Conveyor Makes Unusual Sounds

| *Probable Cause* | *Possible remedy* |
|---|---|
| Defective gear reducer assembly | Replace gear reducer assembly (par. 56). |
| Defective or dry head and foot shaft bearings. | Lubricate per LO 5-3910-202-15 or report condition to field and depot maintenance. |

### 44. Conveyor Belt Does Not Maintain Rated Speed

| *Probable Cause* | *Possible remedy* |
|---|---|
| Rollers jammed | Check for foreign matter wedged in rollers. |
| Conveyor belt tension too tight or too loose. | Adjust conveyor belt tension (par. 50). |
| Drive belts slipping. | Adjust drive belt tension (par. 53). |
| Belt overloaded. | Reduce load on belt to rated output. |

### 45. Conveyor Belt Runs to One Side

| *Probable Cause* | *Possible remedy* |
|---|---|
| Belt improperly installed | Install belt (par. 50). |

| *Probable Cause* | *Possible remedy* |
|---|---|
| Troughing and return rollers need adjusting. | Loosen mounting hardware on the troughing or return rollers at the area where belt runs off to one side. Set the rollers at an angle other than right angles to the frame and test the belt operation. Set the rollers on way or the other until the belt runs true. Divide the adjustment over a number of rollers rather than over one or two. |

## 46. Electric Motor Fails to Operate

| *Probable Cause* | *Possible remedy* |
|---|---|
| Defective magnetic starter. | Replace magnetic starter (par. 80). |
| Defective motor. | Replace motor (par. 81). |
| Defective power cable. | Replace or repair power cable (par. 78). |

## 47. Hydraulic System Does Not Deliver Full Pressure

| *Probable Cause* | *Possible remedy* |
|---|---|
| Defective hydraulic pump. | Replace or repair hydraulic pump (par. 74). |
| Defective hydraulic cylinder. | Replace hydraulic cylinder (par. 75). |
| Defective flow control valve and hose. | Replace flow control valve or hose (par. 74). |
| Low hydraulic oil level. | Service hydraulic oil tank (par. 76). |

## 48. Field Expedient Repairs

The following troubles may occur while the belt conveyor, model PG70 is operating in the field and supplies or repair parts are not available and normal remedial action cannot be performed. When this is so, the expedient remedy provided may be used. Field expedients will be used only during emergency conditions.

| *Trouble* | *Expedient remedy* |
|---|---|
| *a.* A broken drive belt. | Remove broken belt and increase tension on remaining belt and operate until new belts can be installed. |
| *b.* Broken conveyor belt. | Lace belt together with suitable material, such as wire, cord, or rope, until belt can be replaced or repaired. |
| *c.* Defective magnetic starter. | Electrically bypass magnetic starter in the control box. |

## Section V. CONVEYOR BELT DRIVE ASSEMBLY

## 49. General

The conveyor belt drive assembly consists of the conveyor belt, torque arm assembly, drive belt guard, drive belts, drive pulleys, gear reducer assembly, and lagging.

## 50. Conveyor Belt

*a. Adustment.* Adjust the conveyor belt as instructed in figure 15.

*Note.* Belt should be just tight enough to carry the load. Too tight or too loose adjustment causes undue wear on belt.

*b. Removal.* Remove the conveyor belt as instructed in figure 16.

*c. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged conveyor belt.

*d.* Installation. Install the conveyor belt as illustrated in figure 16.

*Note.* Install the conveyor belt with proper side up to insure maximum life.

## 51. Torque Arm Assembly

*a. Removal.* Remove the torque arm assembly as instructed in figure 17.

*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged torque arm assembly.

*c. Installation.* Install the torque arm assembly as illustrated in figure 17.

## 52. Drive Belt Guard

*a. Removal.* Remove the drive belt guard as instructed in figure 17.

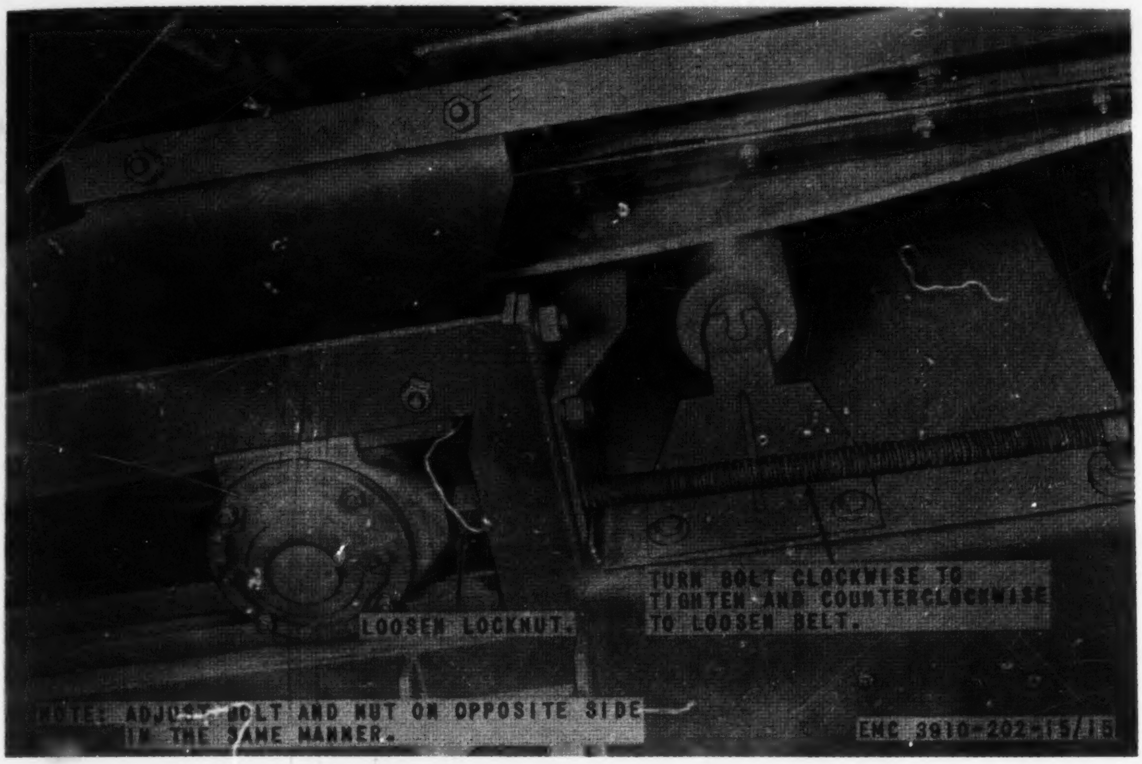

LOOSEN LOCKNUT.
TURN BOLT CLOCKWISE TO TIGHTEN AND COUNTERCLOCKWISE TO LOOSEN BELT.
NOTE: ADJUST BOLT AND NUT ON OPPOSITE SIDE IN THE SAME MANNER.
EMC 3910-202-15/15

*Figure 15. Conveyor belt adjustment.*

*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged drive belt guard.

*c. Installation.* Install the drive belt guard as illustrated in figure 17.

## 53. Drive Belts

*a. Adjustment.* Adjust the drive belts as instructed in figure 18.

*Note.* Adjust belts to one-half inch deflection midway between pulleys.

*b. Removal.*

(1) Remove the drive belt guard (par. 52).

(2) Remove the drive belts as instructed in figure 19.

*c. Cleaning and Inspection.* Clean and inspect. Replace a defective drive belt.

*d. Installation.*

(1) Install the drive belts as illustrated in figure 19.

(2) Install the drive belt guard (par. 52).

## 54. Drive Pulleys

*a. Removal.*

(1) Remove the drive belt guard (par. 52) and drive belts (par. 53).

(2) Remove the drive pulleys as instructed in figure 20.

*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged drive pulley.

*c. Installation.*

(1) Install the drive pulleys as illustrated in figure 20.

(2) Install the drive belts (par. 53) and drive belt guard (par. 52).

## 55. Lagging

*a. Removal.*

(1) Disconnect the conveyor belt (par.50).

(2) Remove the lagging as instructed in figure 21.

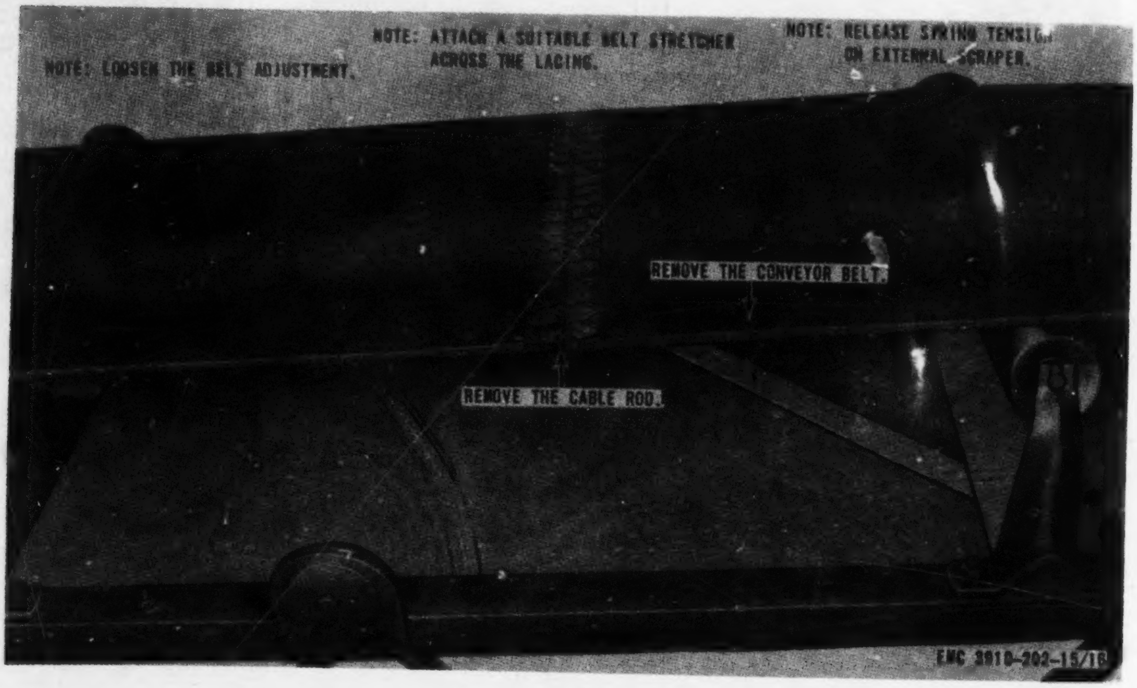

NOTE: LOOSEN THE BELT ADJUSTMENT.
NOTE: ATTACH A SUITABLE BELT STRETCHER ACROSS THE LACING.
NOTE: RELEASE SPRING TENSION ON EXTERNAL SCRAPER.
REMOVE THE CONVEYOR BELT.
REMOVE THE CABLE ROD.
ENC 3910-202-15/16

*Figure 16. Conveyor belt removal and installation.*

*b. Cleaning and Inpection.* Clean and inspect. Replace a damaged drum lagging.

*c. Installation.*

(1) Install the lagging as illustrated in figure 21.

(2) Connect conveyor belt (par. 50).

## 56. Gear Reducer Assembly

*a. Removal.*

(1) Disconnect the torque arm assembly (par. 51), and remove the drive belt guard (par. 52), drive belts (par. 53), and drive pulley (par. 54).

(2) Remove the gear reducer assembly as instructed in figure 22.

*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged gear reducer assembly.

*c. Installation.*

(1) Install the gear reducer assembly as illustrated in figure 22.

(2) Install the drive pulley (par. 54), drive belts (par. 53), drive belt guard (par. 52), and connect the torque arm assembly (par. 51).

(3) Service gear reducer assembly (LO 5–3910–202–15).

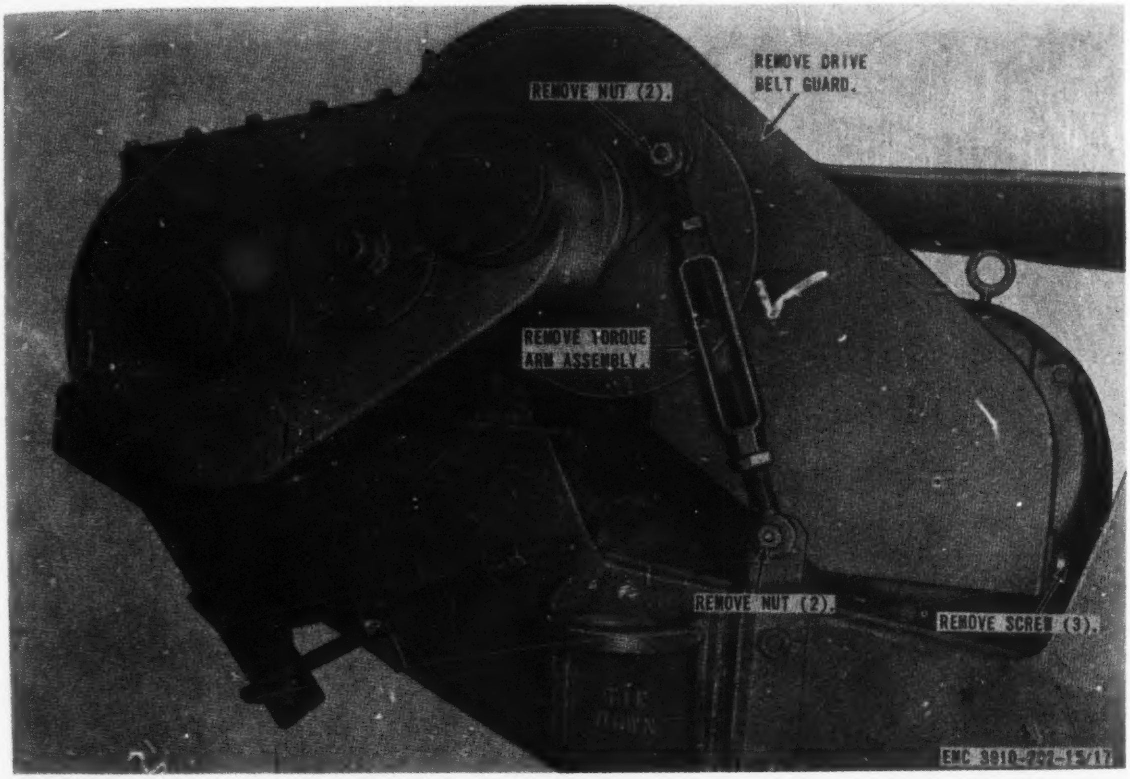
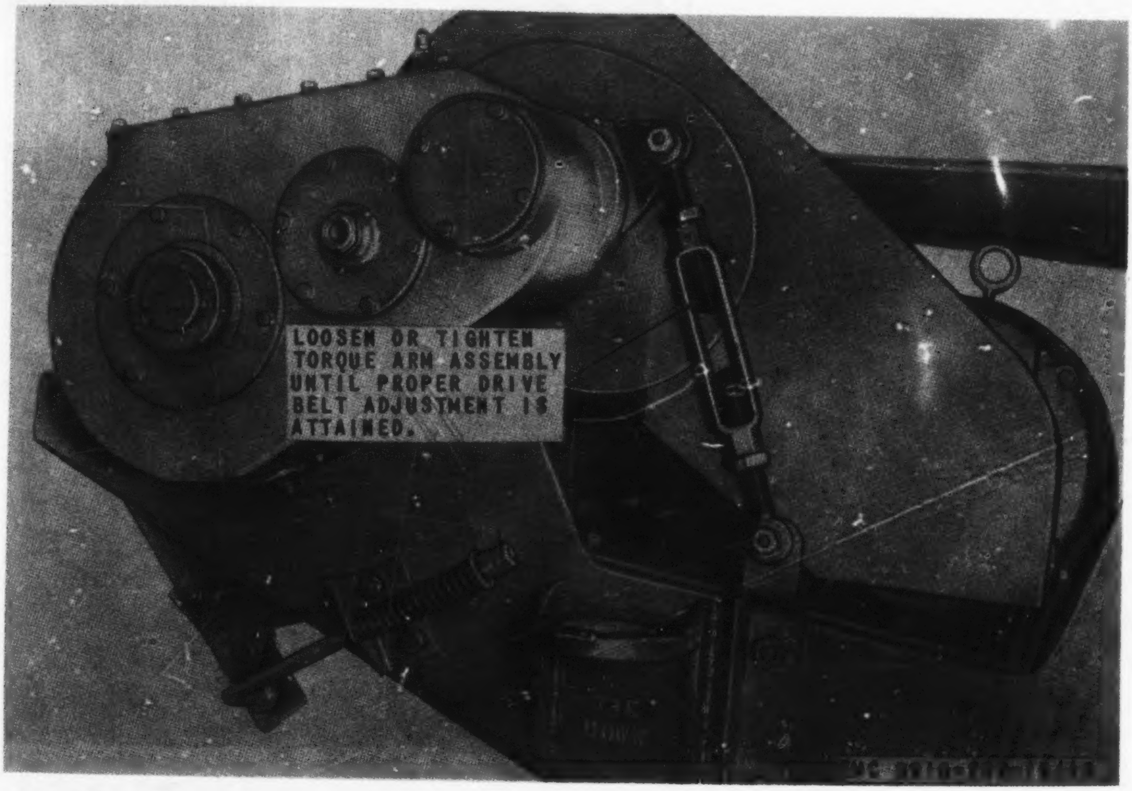

REMOVE NUT (2).
REMOVE DRIVE BELT GUARD.
REMOVE TORQUE ARM ASSEMBLY.
REMOVE NUT (2).
REMOVE SCREW (3).
EMC 3910-202-15/17

*Figure 17. Torque arm assembly and drive belt guard removal and installation.*



LOOSEN OR TIGHTEN TORQUE ARM ASSEMBLY UNTIL PROPER DRIVE BELT ADJUSTMENT IS ATTAINED.

*Figure 18. Drive belts adjustment.*

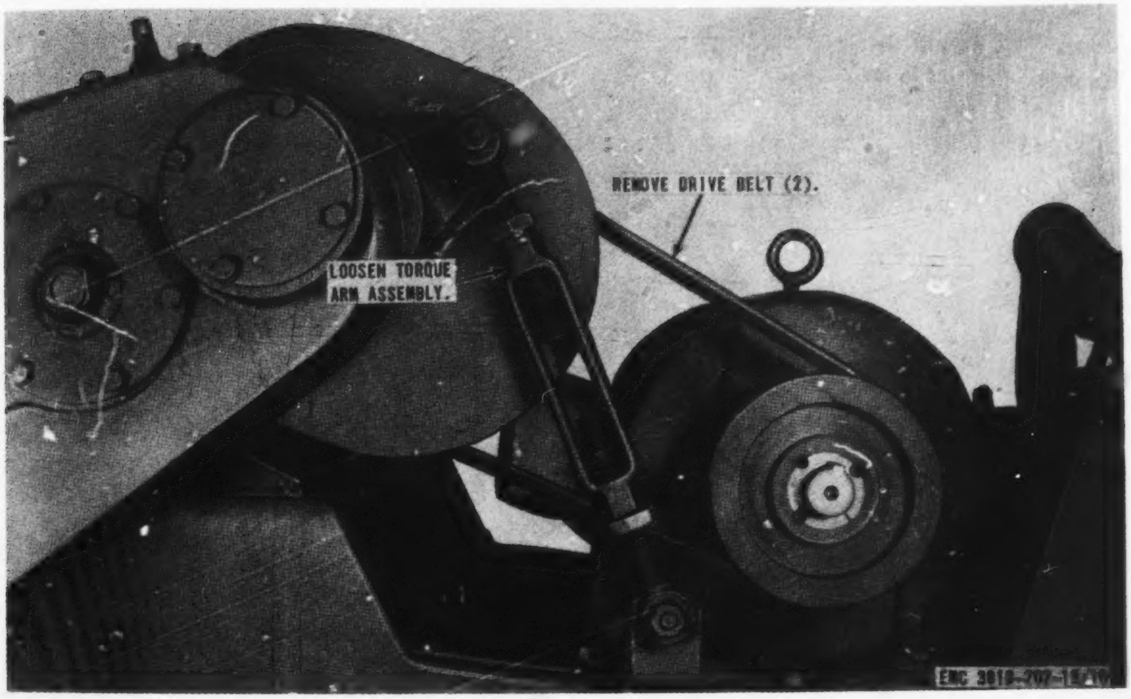

REMOVE DRIVE BELT (2).
LOOSEN TORQUE ARM ASSEMBLY.
EMC 3910-202-15/19

*Figure 19. Drive belts removal and installation.*

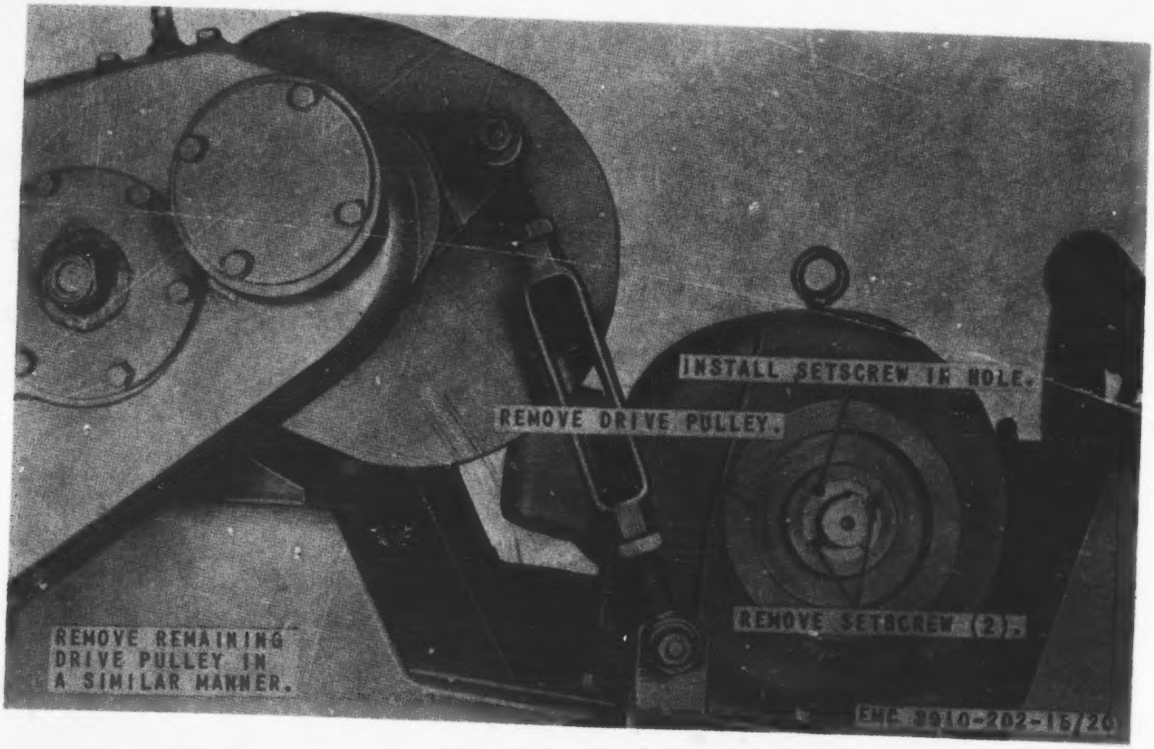

INSTALL SETSCREW IN HOLE.
REMOVE DRIVE PULLEY.
REMOVE REMAINING DRIVE PULLEY IN A SIMILAR MANNER.
REMOVE SETSCREW (2).
EMC 3910-202-15/20

*Figure 20. Drive pulley removal and installation.*

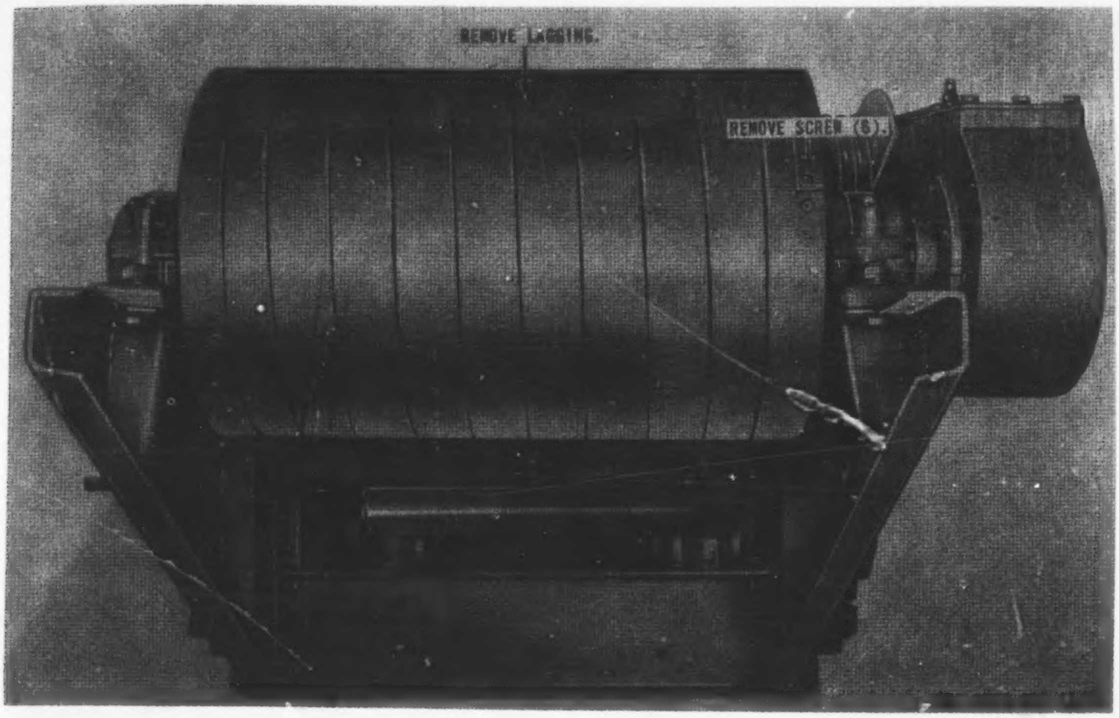

REMOVE LAGGING.
REMOVE SCREW (6).

*Figure 21. Lagging removal and installation.*

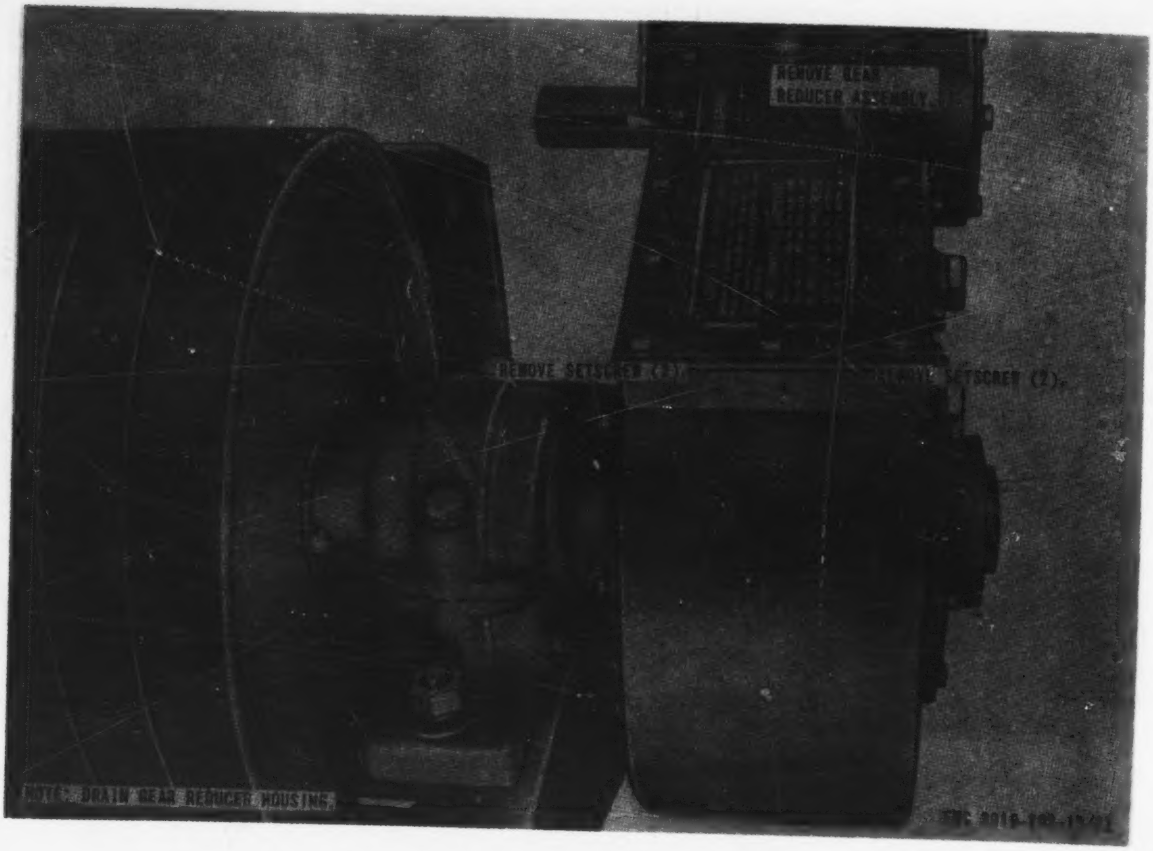


*Figure 22. Gear reducer assembly removal and installation.*

## Section VI. ROLLER ASSEMBLIES

### 57. General

The roller assemblies consist of the troughing roller assembly, return roller assembly, snub roller assembly, and the flat roller assembly. The roller assemblies are used to carry the conveyor belt through its complete cycle of movement.

### 58. Troughing Roller Assemblies

*a. Removal.* Remove the troughing roller assembly as instructed in figure 23.

*b. Disassembly.* Disassemble the troughing roller assembly as illustrated in figure 24.

*Note.* Disassemble the remaining assemblies in a similar manner.

*c. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged roller assembly.

*d. Reassembly.* Reassemble the troughing roller assembly as illustrated in figure 24.

*e. Installation.* Install the troughing roller assembly as illustrated in figure 23.

*Note.* Install the roller assemblies with the arrow pointing in the direction of belt travel.

### 59. Return Roller Assemblies

*a. Removal.* Remove the return roller assembly as instructed in figure 25.

*Note.* Remove roller mounting brackets only as necessary.

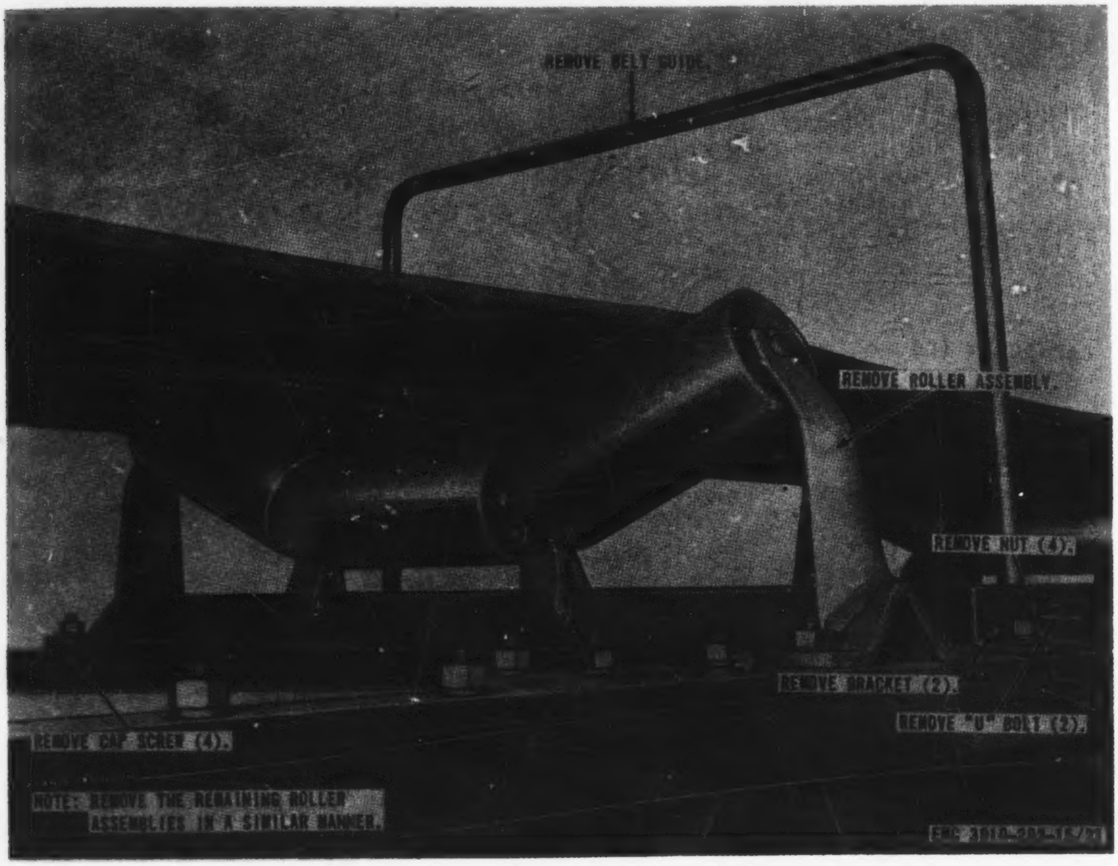

REMOVE BELT GUIDE.
REMOVE ROLLER ASSEMBLY.
REMOVE NUT (4).
REMOVE BRACKET (2).
REMOVE "U" BOLT (2).
REMOVE CAP SCREW (4).
NOTE: REMOVE THE REMAINING ROLLER ASSEMBLIES IN A SIMILAR MANNER.
EMC 3910-202-15/23

*Figure 23. Troughing roller assembly and belt guide removal and installation.*

*b. Disassembly.* Disassemble the return roller assembly as illustrated in figure 26.

*c. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged roller assembly.

*d. Reassembly.* Reassemble the return roller assembly as illustarted in figure 26.

*e. Installation.* Install the return roller assembly as illustrated in figure 25.

## 60. Snub Roller Assemblies

*a. Removal.* Remove the snub roller assemblies as instructed in figure 27.

*b. Disassembly.* Disassemble the snub roller assemblies as instructed in figure 26.

*c. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged roller assembly.

*d. Reassembly.* Reassemble the snub roller assemblies as illustrated in figure 26.

*e. Installation.* Install the snub roller assemblies as illustrated in figure 27.

## 61. Flat Roller Assemblies

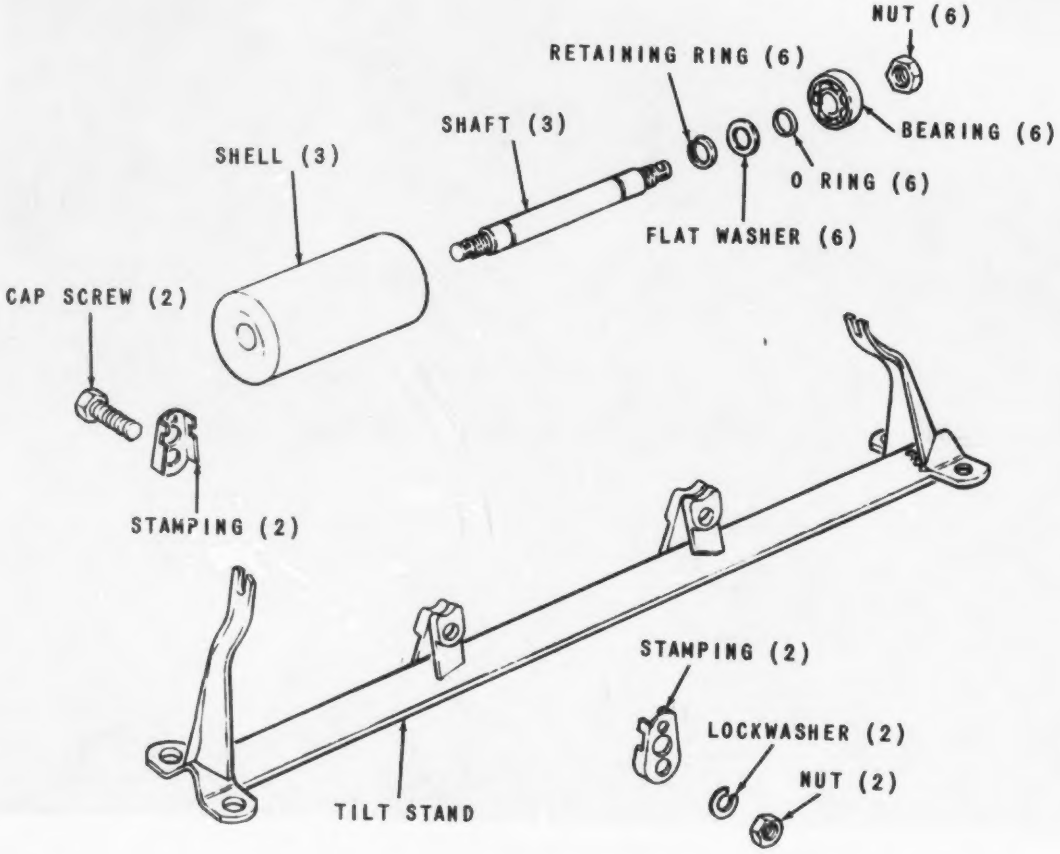
*a. Removal.* Remove the flat roller assembly as instructed in figure 28.

*b. Disassembly.* Disassemble the flat roller assembly a instructed in figure 26.

*c. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged roller assembly.

*d. Reassembly.* Reassemble the flat roller assembly as illustrated in figure 26.

*e. Installation.* Install the flat roller assembly as illustrated in figure 28.


NUT (6)
RETAINING RING (6)
BEARING (6)
SHAFT (3)
SHELL (3)
O RING (6)
FLAT WASHER (6)
CAP SCREW (2)
STAMPING (2)
STAMPING (2)
LOCKWASHER (2)
NUT (2)
TILT STAND

EMC 3910-202-15/24

*Figure 24. Troughing roller assembly, exploded view.*

*Figure 25. Return roller assembly removal and installation.*

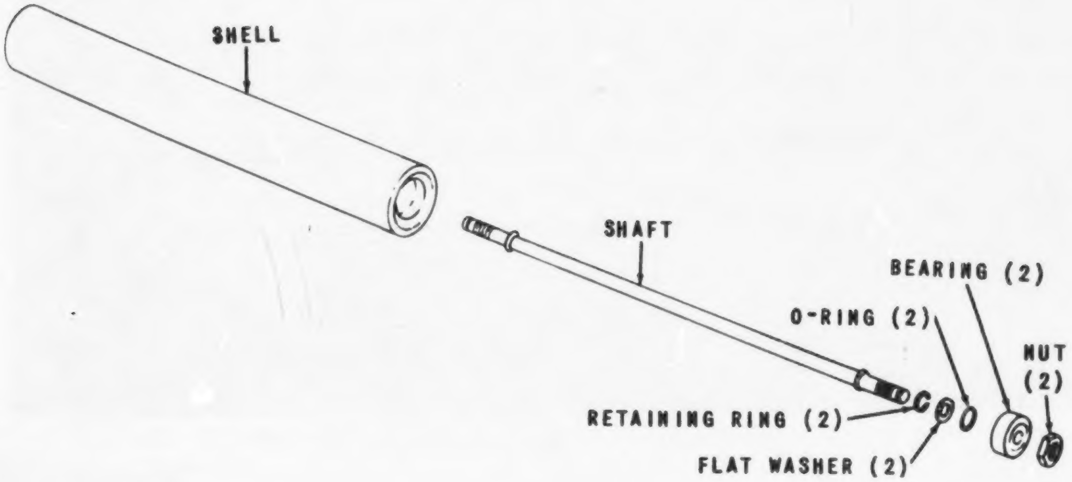
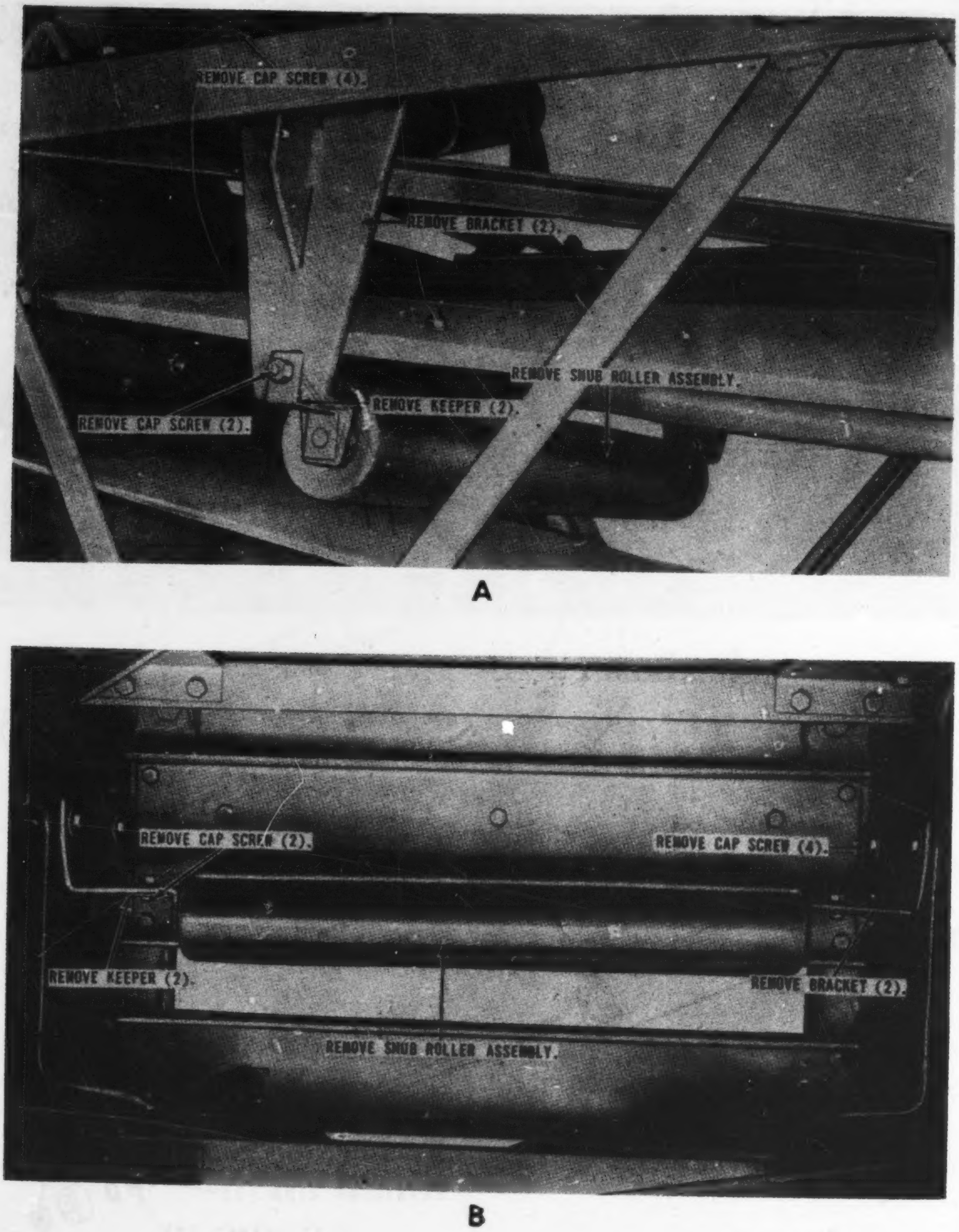

SHELL
SHAFT
BEARING (2)
O-RING (2)
NUT (2)
RETAINING RING (2)
FLAT WASHER (2)
EMC 3910-202-15/26

*Figure 26. Return, flat, and snub roller assemblies, exploded view.*


REMOVE CAP SCREW (4).
REMOVE BRACKET (2).
REMOVE SNUB ROLLER ASSEMBLY.
REMOVE KEEPER (2).
REMOVE CAP SCREW (2).
A
REMOVE CAP SCREW (2).
REMOVE CAP SCREW (4).
REMOVE KEEPER (2).
REMOVE BRACKET (2).
REMOVE SNUB ROLLER ASSEMBLY.
B

EMC 3910-202-15/27

A—Front Snub roller

B—Rear snub roller

*Figure 27. Snub roller assemblies removal and installation.*

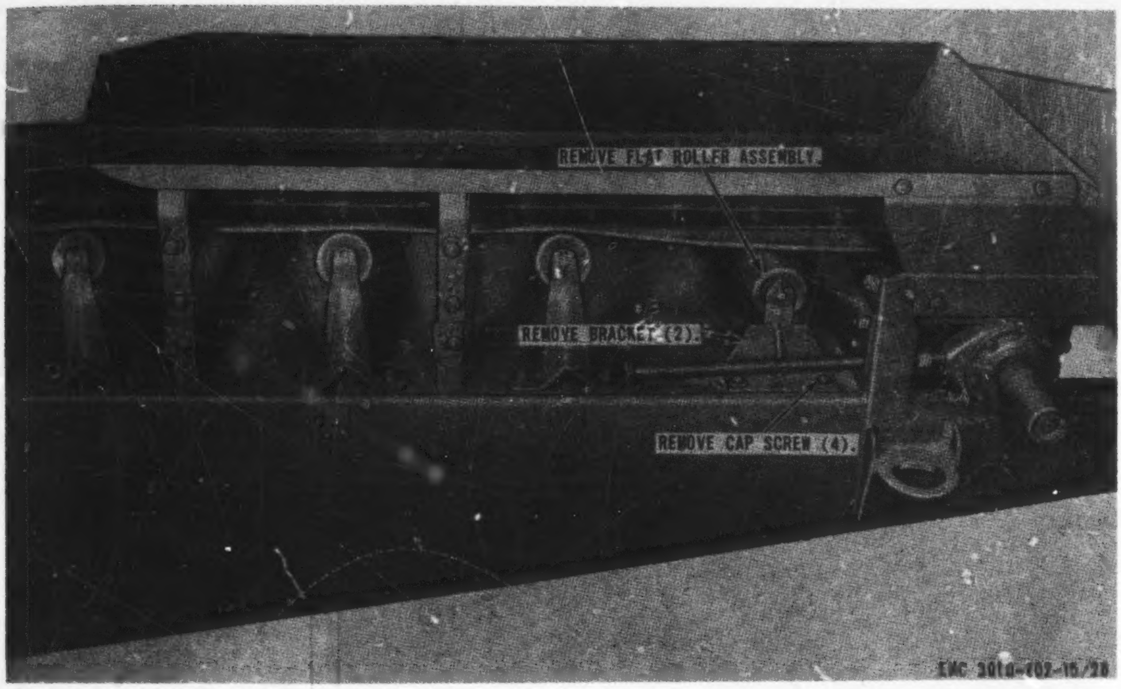


*Figure 28. Flat roller assembly removal and installation.*

## Section VII. CONVEYOR FRAME COMPONENTS

### 62. General

The conveyor frame components covered in this section includes the lunette, foot shaft pulley guard, safety chains, hitch, belt guides, hopper assembly, external wiper assembly, interal wiper assembly, and head shaft pulley guard.

### 63. Foot Shaft Pulley Guard

*a. Removal.* Remove the foot shaft guard as instructed in figure 29.

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged guard.

*c. Installation.* Install the foot shaft pulley guard as illustrated in figure 29.

### 64. Lunette

*a. Removal.* Remove the lunette as instructed in figure 30.

*b. Cleaning and inspection.* Clean and inspect. Replace or repair a damaged lunette.

*c. Installation.* Install the lunette as illustrated in figure 30.

### 65. Safety Chains

*a. Removal.*

(1) Remove the foot shaft pulley guard (par. 63).

(2) Remove the safety chain as instructed in figure 30.

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged safety chain.

*c. Installation.*

(1) Install the saftey chains as illustrated in figure 30.

(2) Install the foot shaft pulley guard (par. 63).

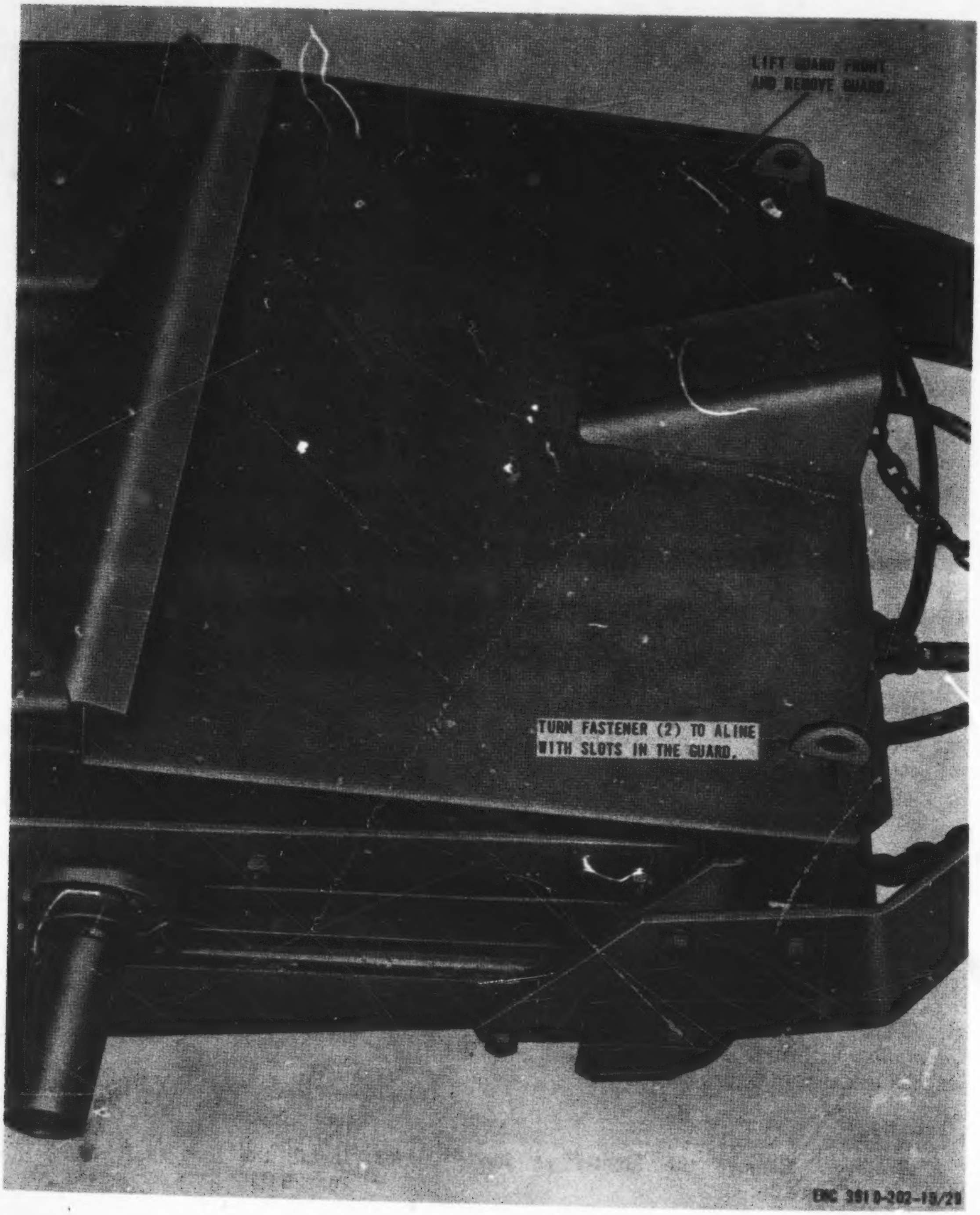
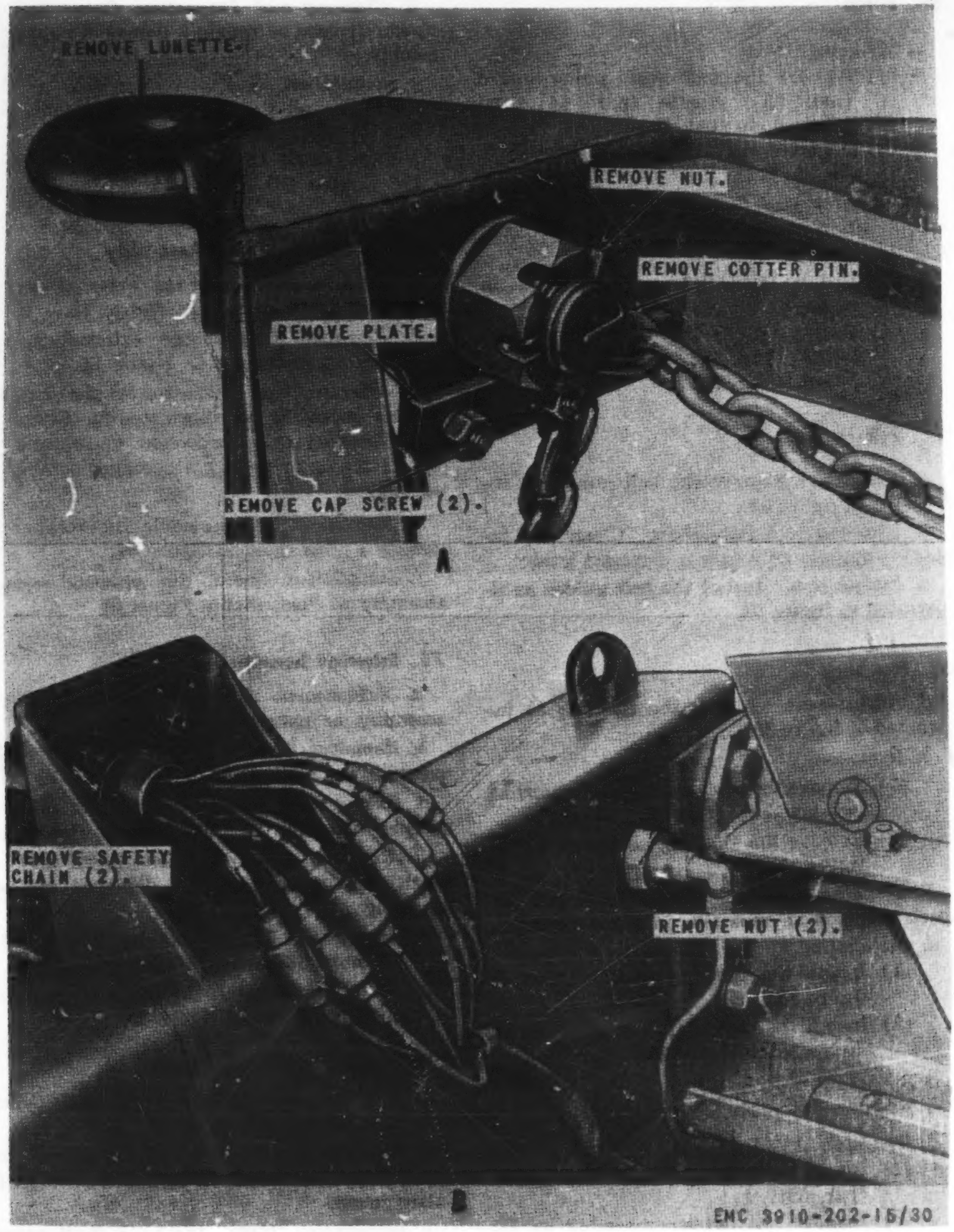

LIFT GUARD FRONT
AND REMOVE GUARD.
TURN FASTENER (2) TO ALINE
WITH SLOTS IN THE GUARD.
EMC 3910-202-15/29

*Figure 29. Foot shaft pulley guard removal and installation.*


REMOVE LUNETTE.
REMOVE NUT.
REMOVE COTTER PIN.
REMOVE PLATE.
REMOVE CAP SCREW (2).
A
REMOVE SAFETY CHAIN (2).
REMOVE NUT (2).
B
EMC 3910-202-15/30

A—Lunette B—Safety chain

*Figure 30. Lunette and safety chain removal and installation.*

## 66. Hitch

*a. Removal.*

(1) Remove the foot shaft pulley guard (par. 63), lunette (par. 64), and safety chain (par. 65).

(2) Remove the hitch as instructed in figure 31.

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged hitch.

*c. Installation.*

(1) Install the hitch as illustrated in figure 31.

(2) Install the safety chain (par. 65), lunette (par. 64), and foot shaft pulley guard (par. 63).

## 67. Belt Guides

*a. Removal.* Remove the belt guides as instructed in figure 23.

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged guide.

*c. Installation.* Install the belt guides as illustrated in figure 23.

## 68. Flashing

*a. Adjustment.* Adjust the flashing as instructed in figure 32.

*b. Removal.*

(1) Remove the foot shaft pulley guard as instructed in figure 29.

(2) Remove the flashing as instructed in figure 33.

*c. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged flashing.

*d. Installation.*

(1) Install the flashing as illustrated in figure 33.

(2) Install the foot shaft pulley guard as instructed in figure 29.

## 69. Hopper Assembly

*a. Removal.*

(1) Remove the foot shaft pulley guard (par. 63).

(2) Remove the hopper assembly as instructed in figure 34.

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged hopper assembly.

*c Installation.*

(1) Install the hopper assembly as illustrated in figure 34.

(2) Install the foot shaft pulley guard (par 63).

## 70. External Scraper Assembly

*a. Adjustment.* Adjust the external scraper assembly as instructed in figure 35.

*b. Removal.* Remove the external scraper assembly as instructed in figure 36.

*c. Disassembly.* Disassemble the external scraper assembly as illustrated in figure 37.

*d. Cleaning and Inspection.* Clean and inspect. Repair or replace a damaged scraper assembly.

*e. Reassembly.* Reassemble the scraper assembly a illustrated in figure 37.

*f. Installation.* Install the external scraper assembly as illustrated in figure 36.

## 71. Internal Scraper Assembly

*a. Adjustment.* Adjust the internal scraper assembly as instructed in figure 38.

*b. Removal.* Remove the internal scraper assembly as instructed in figure 39.

*c. Disassembly.* Disassemble the internal scraper assembly a illustrated in figure 40.

*d. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged scraper assembly.

*e. Reassembly.* Reassemble the internal scraper assembly ilustrated in figure 40.

*f. Installation.* Install the internal scraper assembly illustrated in figure 39.

## 72. Head Shaft Pulley Guard

*a. Removal.* Remove the head shaft pulley guard as instructed in figure 41.

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged head shaft pulley guard.

*c. Installation.* Install the head shaft pulley guard as illustrated in figure 41.

*Figure 31. Hitch removal and installation.*

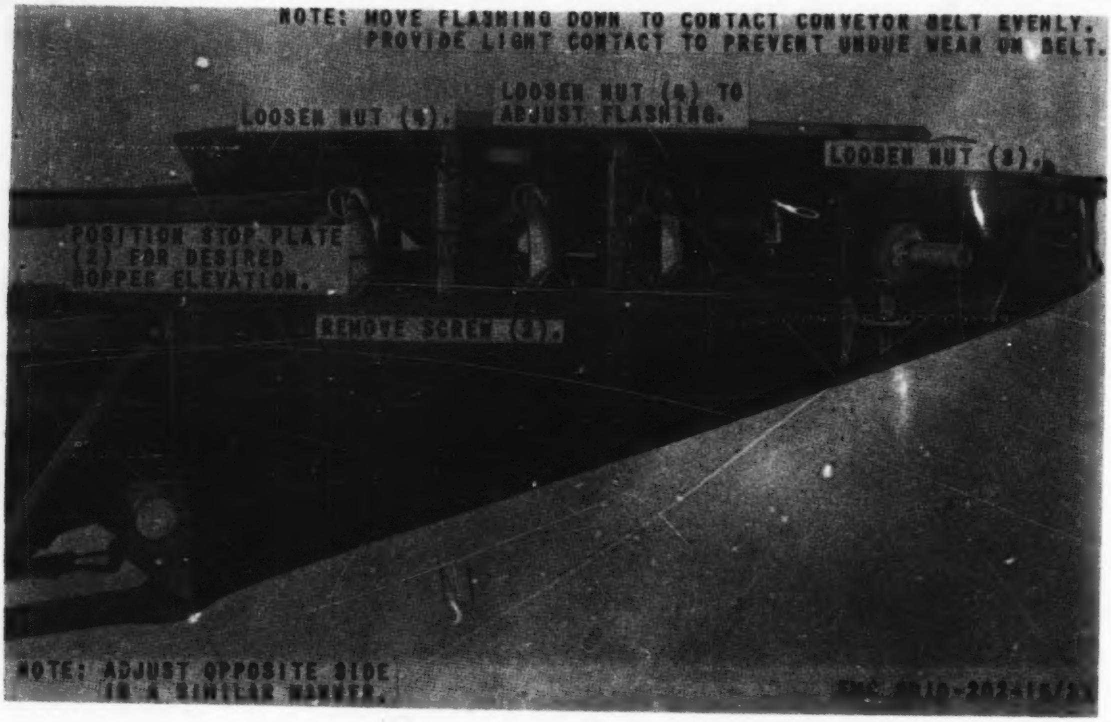

NOTE: MOVE FLASHING DOWN TO CONTACT CONVEYOR BELT EVENLY.
PROVIDE LIGHT CONTACT TO PREVENT UNDUE WEAR ON BELT.
LOOSEN NUT (4).
LOOSEN NUT (4) TO ADJUST FLASHING.
LOOSEN NUT (8).
POSITION STOP PLATE (2) FOR DESIRED HOPPER ELEVATION.
REMOVE SCREW (2).
NOTE: ADJUST OPPOSITE SIDE IN A SIMILAR MANNER.
EMC 3910-202-15/32

*Figure 32. Flashing adjustment.*

REMOVE CAP SCREW (24)
LOOSEN CAP SCREW (10)

*Figure 33. Flashing removal and installation.*

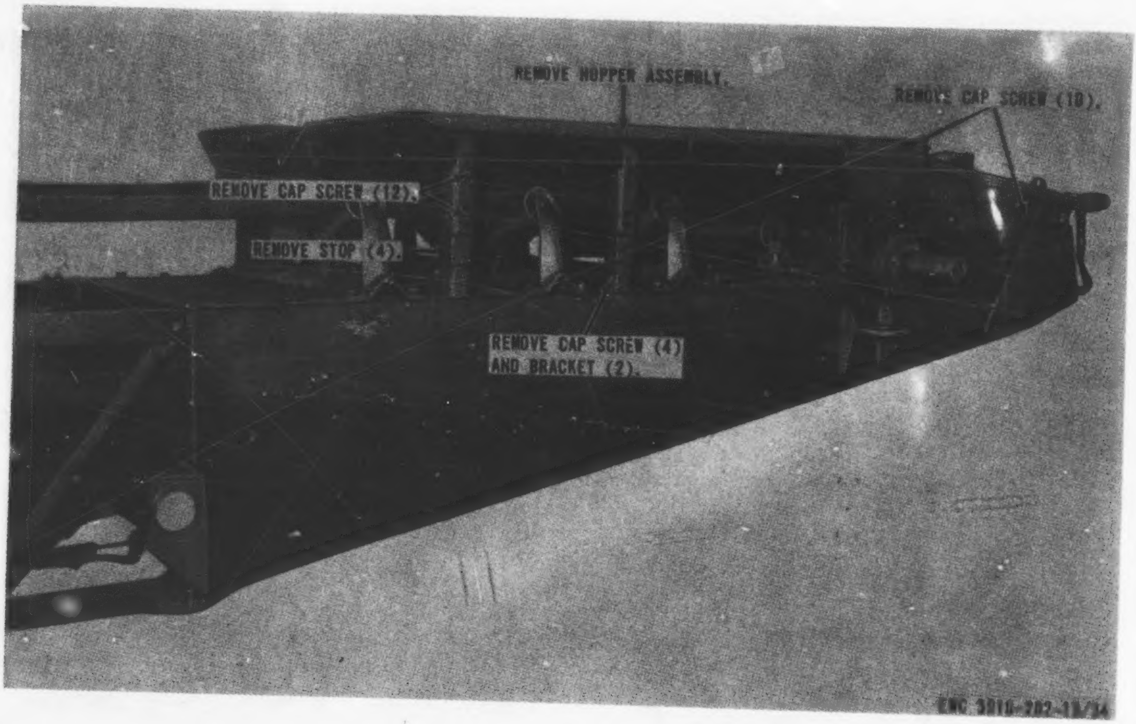
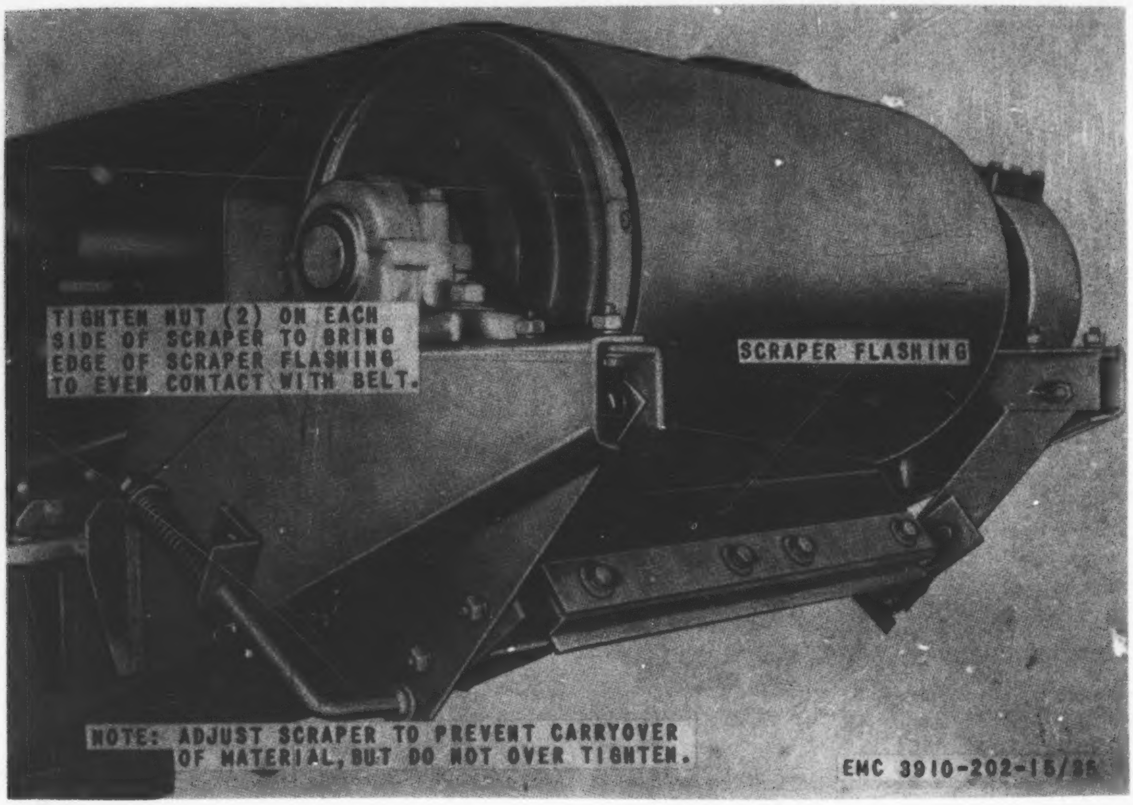

REMOVE HOPPER ASSEMBLY.
REMOVE CAP SCREW (10).
REMOVE CAP SCREW (12).
REMOVE STOP (4).
REMOVE CAP SCREW (4)
AND BRACKET (2).
ENC 3910-202-15/34

*Figure 34. Hopper assembly removal and installation.*


SCRAPER FLASHING
EMC 3910-202-15/35

TIGHTEN NUT (2) ON EACH SIDE OF SCRAPER TO BRING EDGE OF SCRAPER FLASHING TO EVEN CONTACT WITH BELT.

NOTE: ADJUST SCRAPER TO PREVENT CARRYOVER OF MATERIAL, BUT DO NOT OVER TIGHTEN.

*Figure 35. External scraper assembly adjustment.*

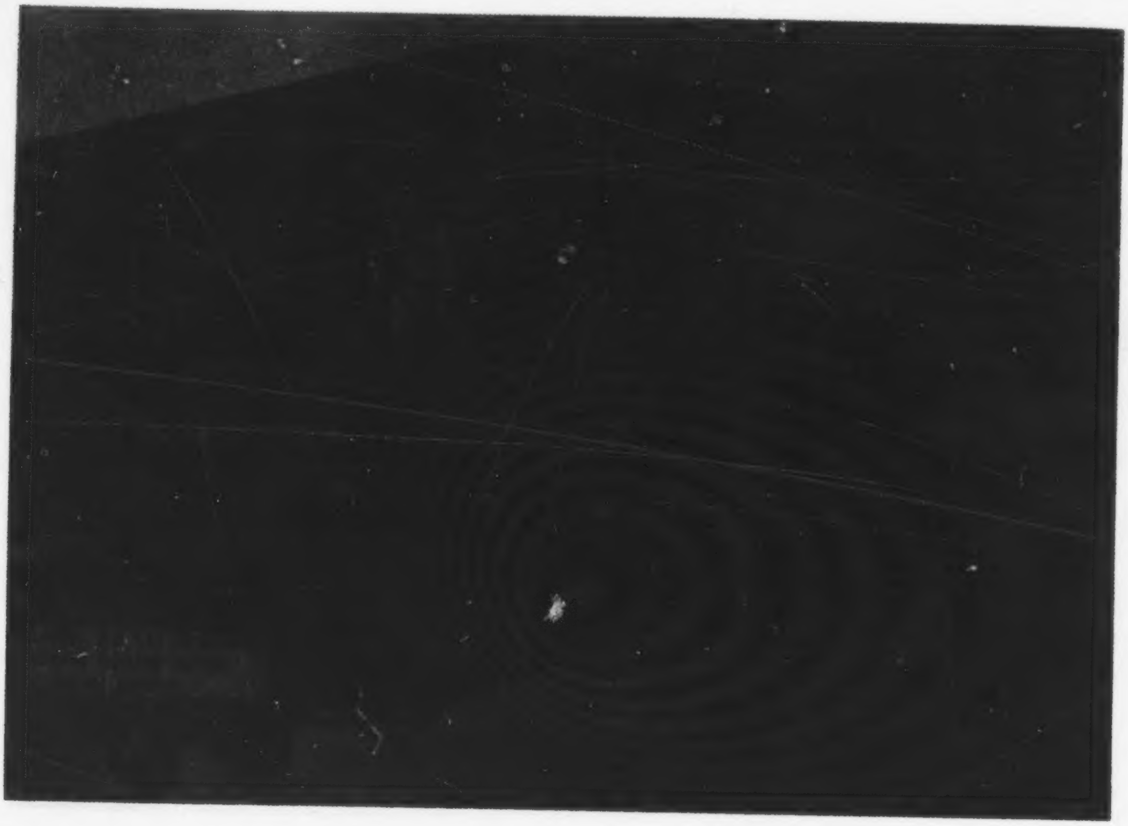
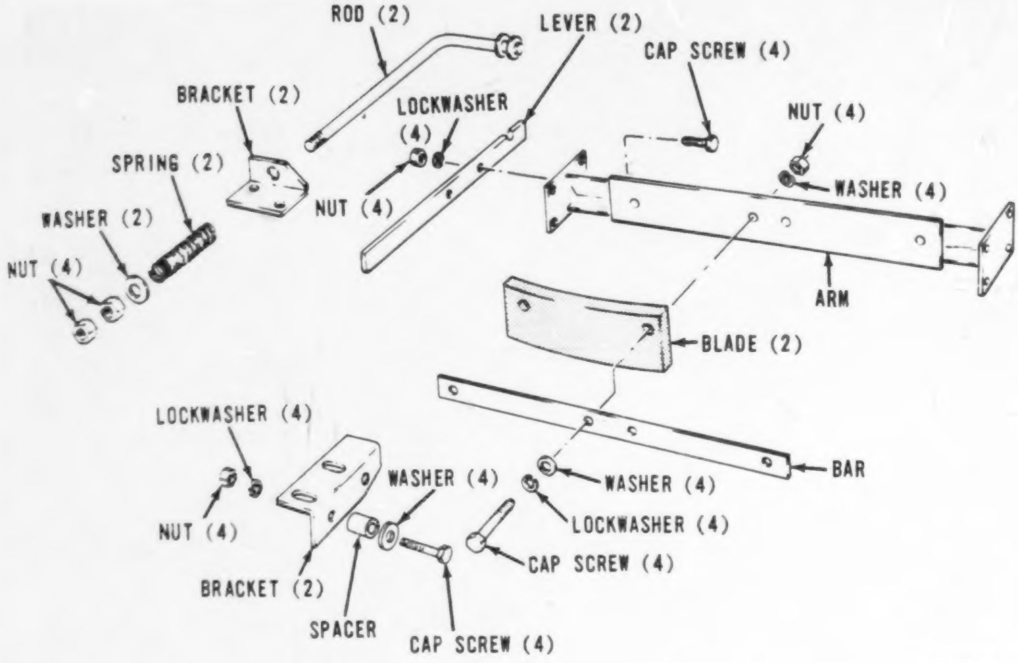


*Figure 36. External scraper assembly removal and installation.*


ROD (2)
LEVER (2)
CAP SCREW (4)
BRACKET (2)
LOCKWASHER (4)
NUT (4)
SPRING (2)
NUT (4)
WASHER (4)
WASHER (2)
NUT (4)
ARM
BLADE (2)
LOCKWASHER (4)
BAR
WASHER (4)
WASHER (4)
NUT (4)
LOCKWASHER (4)
CAP SCREW (4)
BRACKET (2)
SPACER
CAP SCREW (4)

EMC 3910-202-15/37

*Figure 37. External scraper assembly, exploded view.*

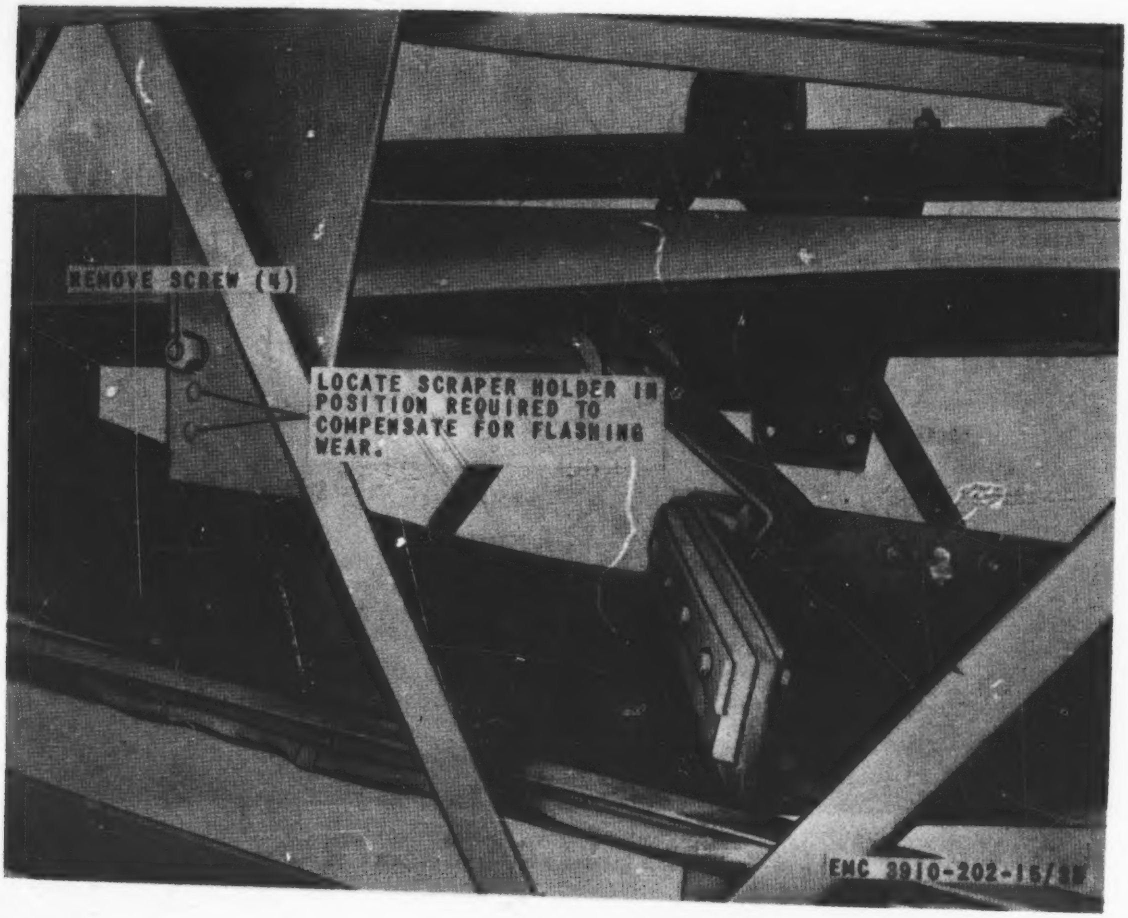

REMOVE SCREW (4)
LOCATE SCRAPER HOLDER IN POSITION REQUIRED TO COMPENSATE FOR FLASHING WEAR.
EMC 3910-202-15/38

*Figure 38. Internal scraper assembly adjustment.*

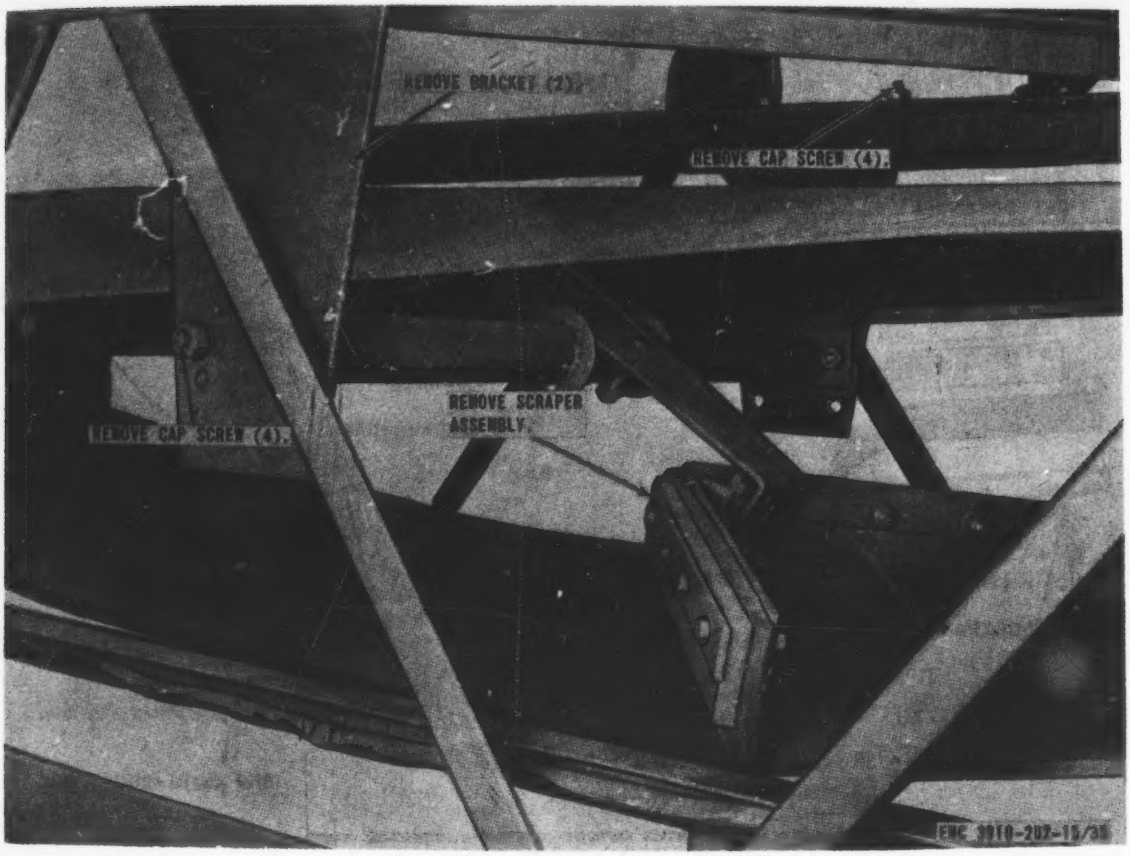
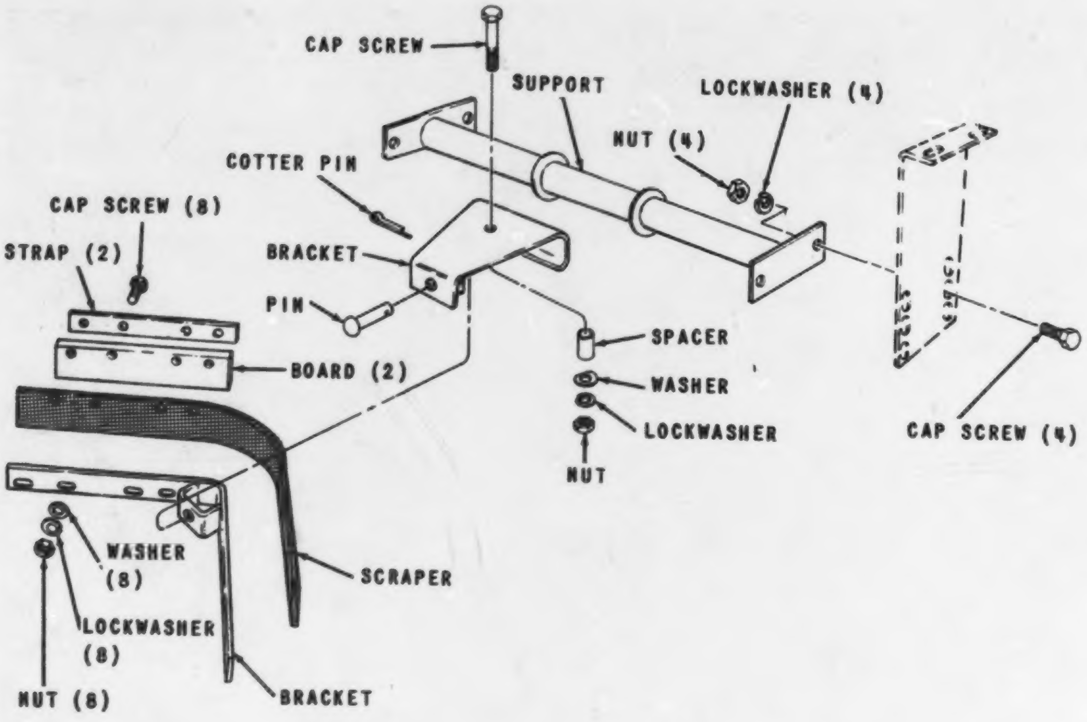

REMOVE BRACKET (2).
REMOVE CAP SCREW (4).
REMOVE CAP SCREW (4).
REMOVE SCRAPER ASSEMBLY.
ENC 3910-202-15/39

*Figure 39. Internal scraper assembly removal and installation.*


CAP SCREW
SUPPORT
LOCKWASHER (4)
NUT (4)
COTTER PIN
CAP SCREW (8)
STRAP (2)
BRACKET
PIN
SPACER
BOARD (2)
WASHER
LOCKWASHER
NUT
CAP SCREW (4)
WASHER (8)
SCRAPER
LOCKWASHER (8)
NUT (8)
BRACKET

EMC 3910-202-15/40

*Figure 40. Internal scraper assembly, exploded view.*

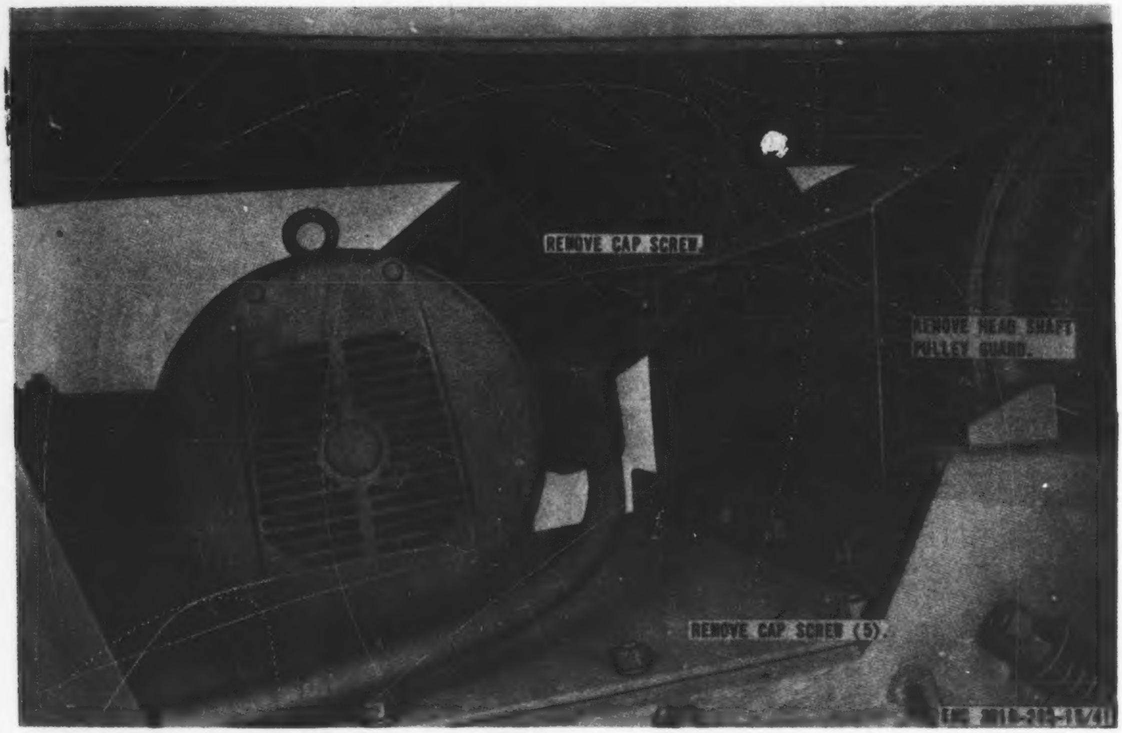


*Figure 41. Head shaft pulley guard removal and installition.*

## Section VIII. HYDRAULIC SYSTEM

### 73. General

The hydraulic system consists of a tank, cap, strainer, and hand operated pump, mounted within the tank, and a pressure release control connected with fittings to a flow control valve. The hydraulic line transfers fluid from the pump to the hydraulic cylinder to raise the conveyor, and returns the fluid to the tank as the conveyor lowers.

### 74. Hydraulic Flow Control Valve, Hand Pump, and Hose

*a. Removal.* Remove the hydraulic flow control valve, hand pump, and hose as instructed in figure 42.

*b. Disassembly.* Disassemble hydraulic hand pump as illustrated in figure 43.

*c. Cleaning, Inspection, and Repair.* Clean and inspect. Replace damaged hose or flow control valve, and replace or repair damaged hydraulic hand pump.

*d. Reassembly.* Reassemble hydraulic hand pump as illustrated in figure 43.

*e. Installation.* Install hydraulic hand pump, hose, and flow control valve as illustrated in figure 42.

### 75. Hydraulic Cylinder

*a. Removal.*

(1) Remove hydraulic hose (par. 74).

(2) Remove hydraulic cylinder as instructed in figure 44.

*b. Cleaning and Inspection.* Clean and inspect. Replace damaged cylinder.

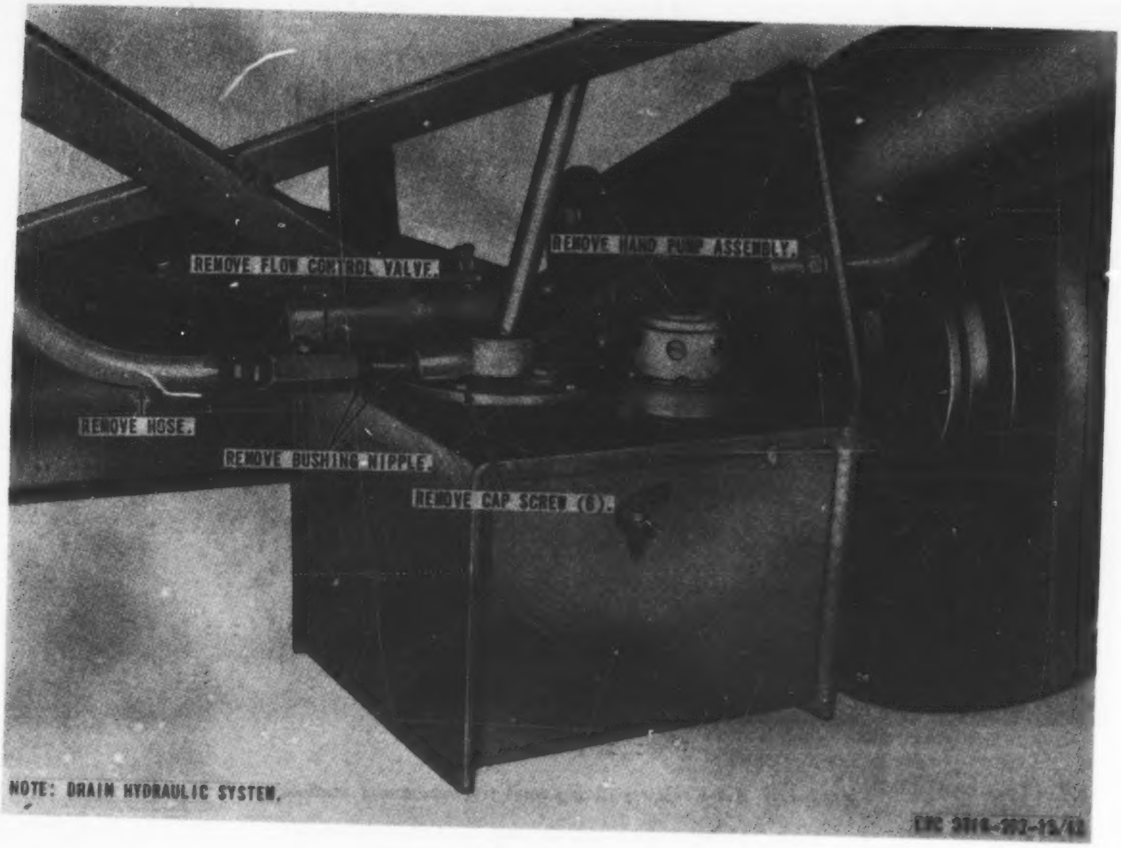

REMOVE FLOW CONTROL VALVE.
REMOVE HAND PUMP ASSEMBLY.
REMOVE HOSE.
REMOVE BUSHING NIPPLE.
REMOVE CAP SCREW (8).
NOTE: DRAIN HYDRAULIC SYSTEM.
EMC 3910-202-15/42

*Figure 42. Hydraulic flow control valve, hand pump, and hose removal and installation.*

*c. Installation.*

(1) Install hydraulic cylinder as illustrated in figure 44.

(2) Install hydraulic hose (par. 74).

## 76. Hydraulic Oil Tank, Cap, and Strainer

*a. Service.* Service the hydraulic oil tank, cap and strainer as instructed in figure 45.

*b. Removal.*

(1) Remove the hydraulic hand pump (par. 74).

(2) Remove the hydraulic oil tank and strainer as instructed in figure 46.

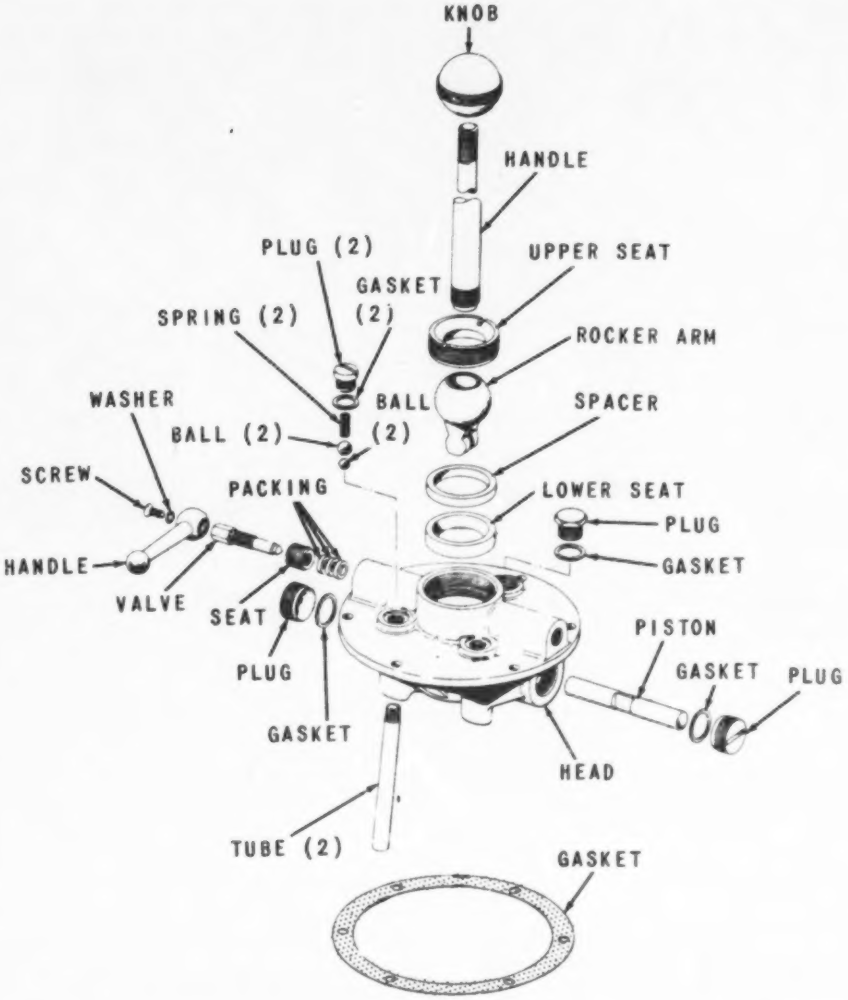
*c. Cleaning and Inspection.* Clean and inspect. Replace damaged hydraulic oil tank or strainer.

*d. Installation.*

(1) Install the hydraulic oil tank and strainer as illustrated in figure 46.

(2) Install the hydraulic hand pump (par. 74).

(3) Service the oil tank (LO 5-3910-202-15).


KNOB
HANDLE
PLUG (2)
UPPER SEAT
GASKET (2)
SPRING (2)
ROCKER ARM
WASHER
BALL (2)
BALL (2)
SPACER
SCREW
PACKING
LOWER SEAT
PLUG
GASKET
HANDLE
VALVE
SEAT
PISTON
PLUG
GASKET
PLUG
GASKET
HEAD
TUBE (2)
GASKET

EMC 3910-202-15/43

*Figure 43. Hydraulic hand pump, exploded view.*

## Section IX. ELECTRICAL SYSTEMS

### 77. General

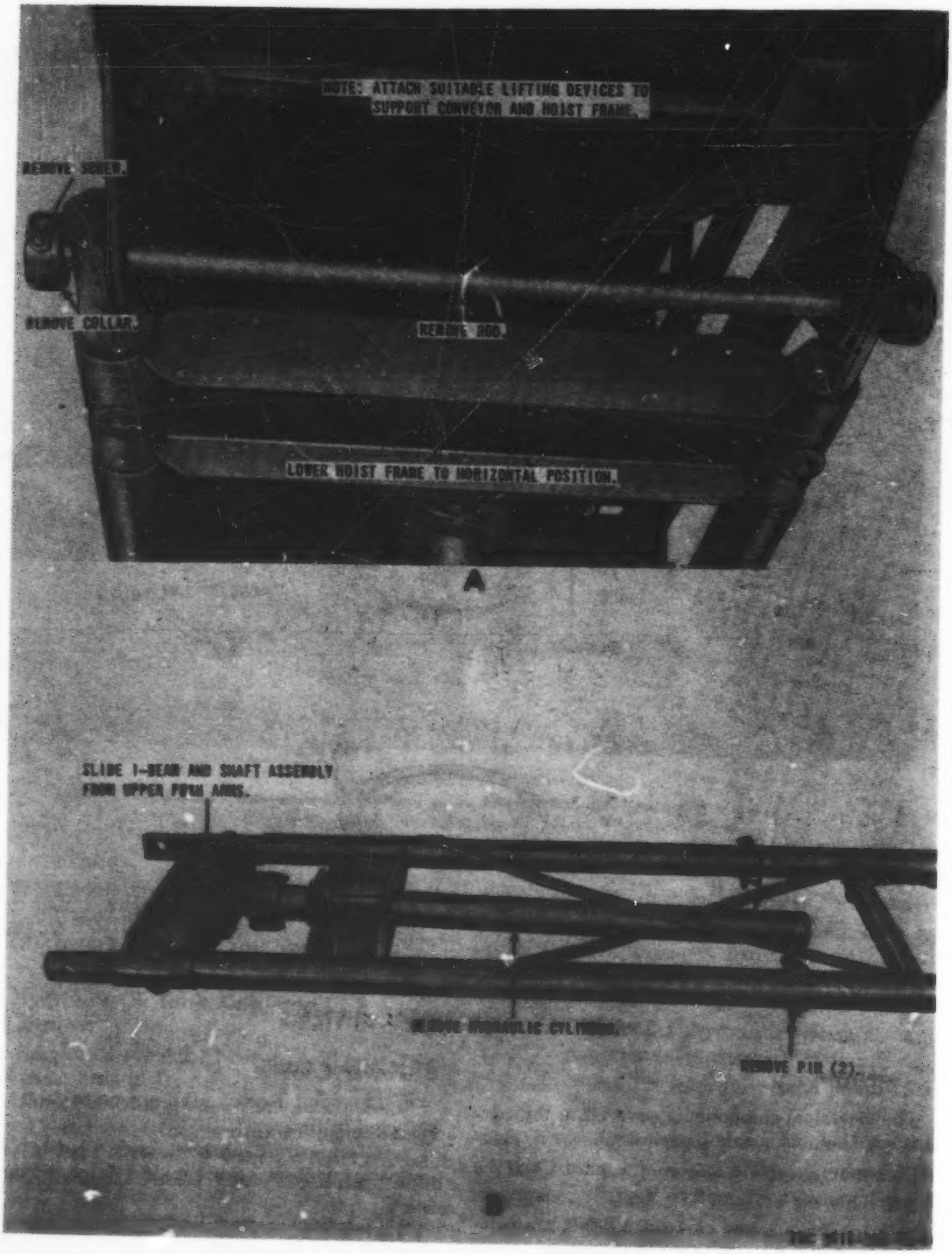
The electrical components covered in this section are the power cable, power cable reel, magnetic starter, electric motor and guard of the 440 volt power system. The trailer receptacle, and tail, blackout, and clearance lights are components of the 24-volt vehicular system.

### 78. Power Cable

*a. Removal.* Remove the power cable as instructed in figure 47.

*b. Cleaning, Inspection, and Repair.* Clean and inspect. Replace or repair a damaged power cable.

*c. Installation.* Install the power cable as illustrated in figure 47.


NOTE: ATTACH SUITABLE LIFTING DEVICES TO SUPPORT CONVEYOR AND HOIST FRAME.
REMOVE SCREW.
REMOVE COLLAR.
REMOVE ROD.
LOWER HOIST FRAME TO HORIZONTAL POSITION.
A
SLIDE I-BEAM AND SHAFT ASSEMBLY FROM UPPER PUSH ARMS.
REMOVE HYDRAULIC CYLINDER.
REMOVE PIN (2).
B

A—Hoist release B—Cylinder removal

*Figure 44. Hydraulic cylinder removal and installation.*

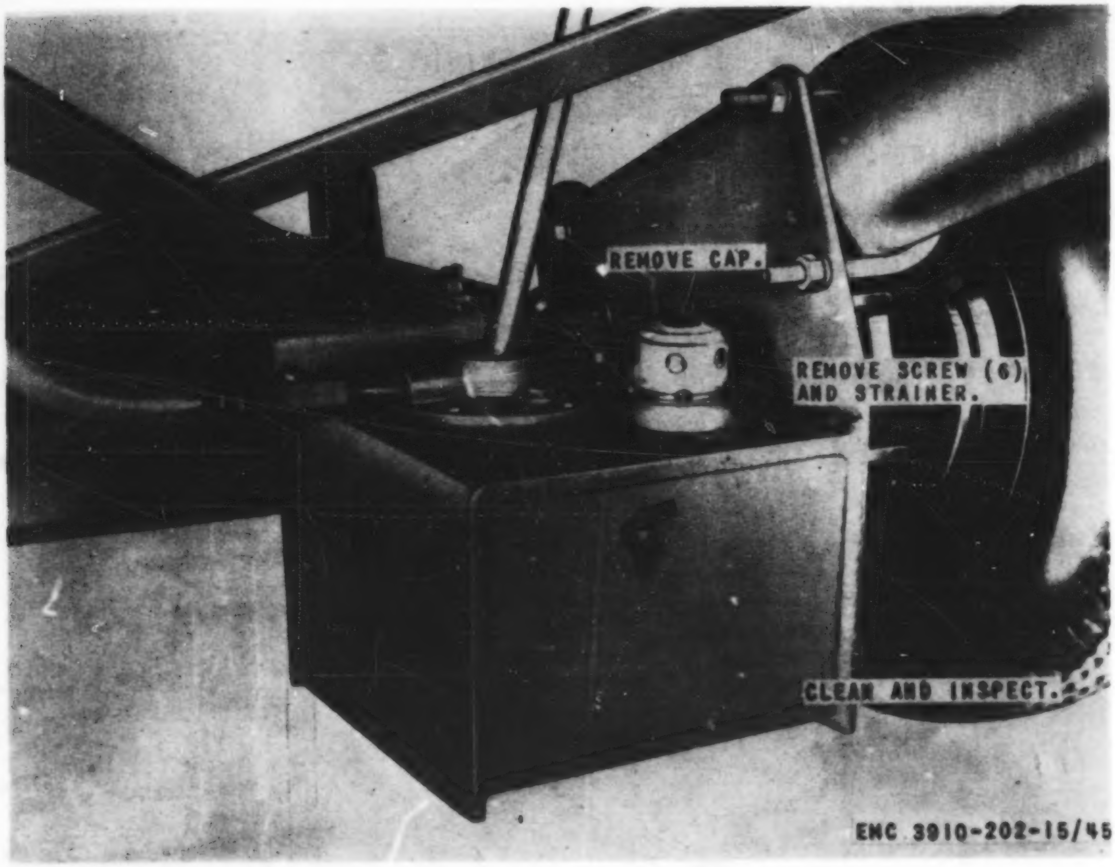


*Figure 45. Hydraulic oil tank, cap, and strainer service.*

## 79. Power Cable Reel and Bracket

*a. Removal.*

(1) Remove the power cable (par.78).

(2) Remove the power cable reel and bracket as instructed in figure 48.

*b. Disassembly.* Disassemble the power cable reel as illustrated in figure 49.

*c. Cleaning, Inspection and Repair.* Clean and inspect. Replace or repair a damaged power cable reel.

*d. Reassembly.* Reassemble the power cable reel as illustrated in figure 49.

*e. Installation.*

(1) Install the power cable reel and bracket as illustrated in figure 48.

(2) Install the power cable (par. 78).

## 80. Magnetic Starter, Heaters, Push Buttons, and Power Receptacle

*a. Removal.* Remove the magnetic starter, heaters, push buttons, and power receptacle as instructed in figure 50.

*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged magnetic starter, heaters, or push buttons.

*c. Installation.* Install the magnetic starter, heaters, push buttons, and power receptacle as illustrated in figure 50.

## 81. Electric Motor Junction Box and Guard

*a. Removal.*

(1) Remove drive belt guard (par. 52), drive belts (par. 53), and drive pulley (par. 54).

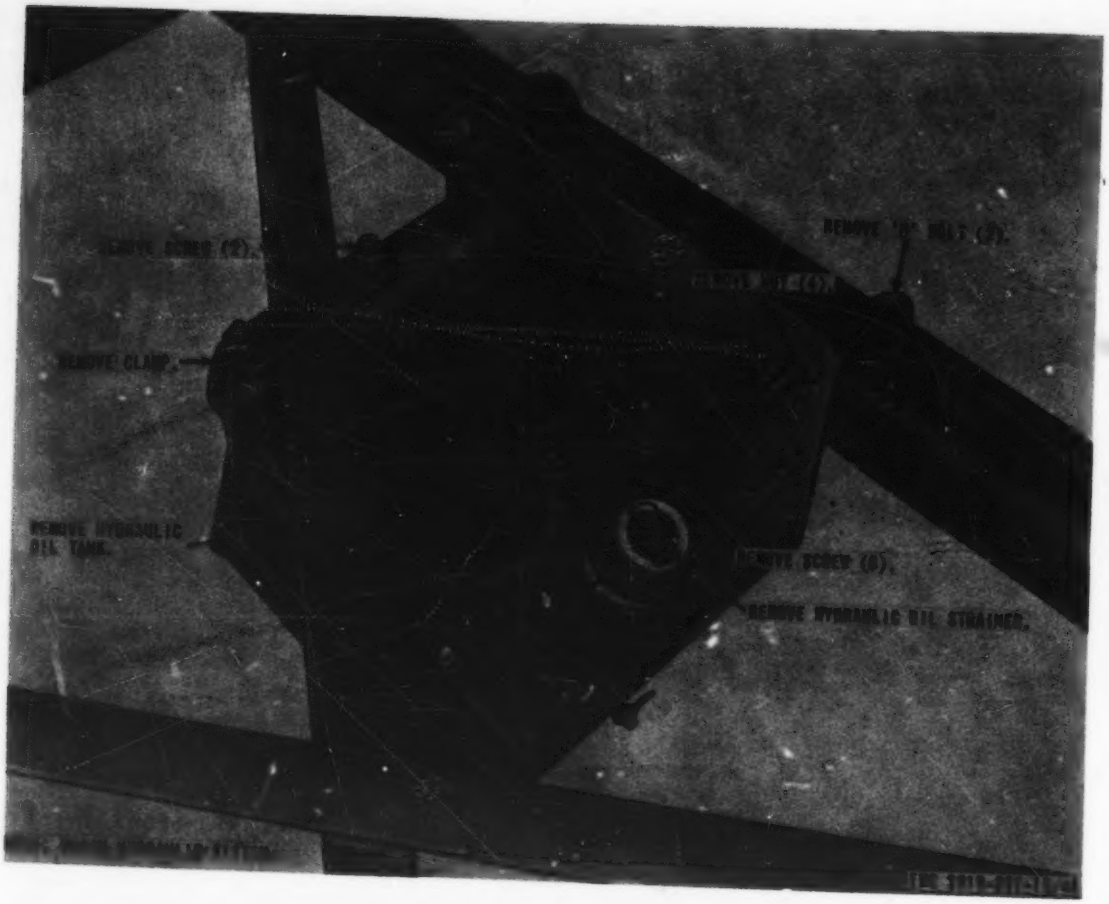

REMOVE SCREW (2).
REMOVE "U" BOLT (2).
REMOVE NUT (4).
REMOVE CLAMP.
REMOVE HYDRAULIC OIL TANK.
REMOVE SCREW (8).
REMOVE HYDRAULIC OIL STRAINER.

*Figure 46. Hydraulic oil tank strainer removal and installation.*

(2) Remove electric motor, junction box, and guard as instructed in figure 51.

*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged electric motor, junction box, or guard.

*c. Installation.*

(1) Install electric motor, junction box, an guard as illustrated in figure 51.

(2) Install drive pulley (par. 54), drive belts (par. 53), and drive belt guard (par. 52).

## 82. Trailer Unit Connector, Cable and Receptacle

*a. Removal.*

(1) Remove trailer unit connector cable from bracket on the end of the foot end frame.

(2) Install foot shaft pulley guard (par. 63).

(3) Remove trailer receptacle as instructed in figure 52.

*b. Cleaning and Inspection.* Clean and inspect. Replace broken or damaged trailer receptacle

*c. Installation.*

(2) Install receptacle as illustrated in figure 52.

(2) Install foot shaft pulley guard (par. 63).

(3) Install trailer unit connector cable on the bracket on end of the foot end frame.

## 83 Electrical Conduit Receptacle

*a. Removal.* Remove electrical conduit receptacle as instructed in figure 53.

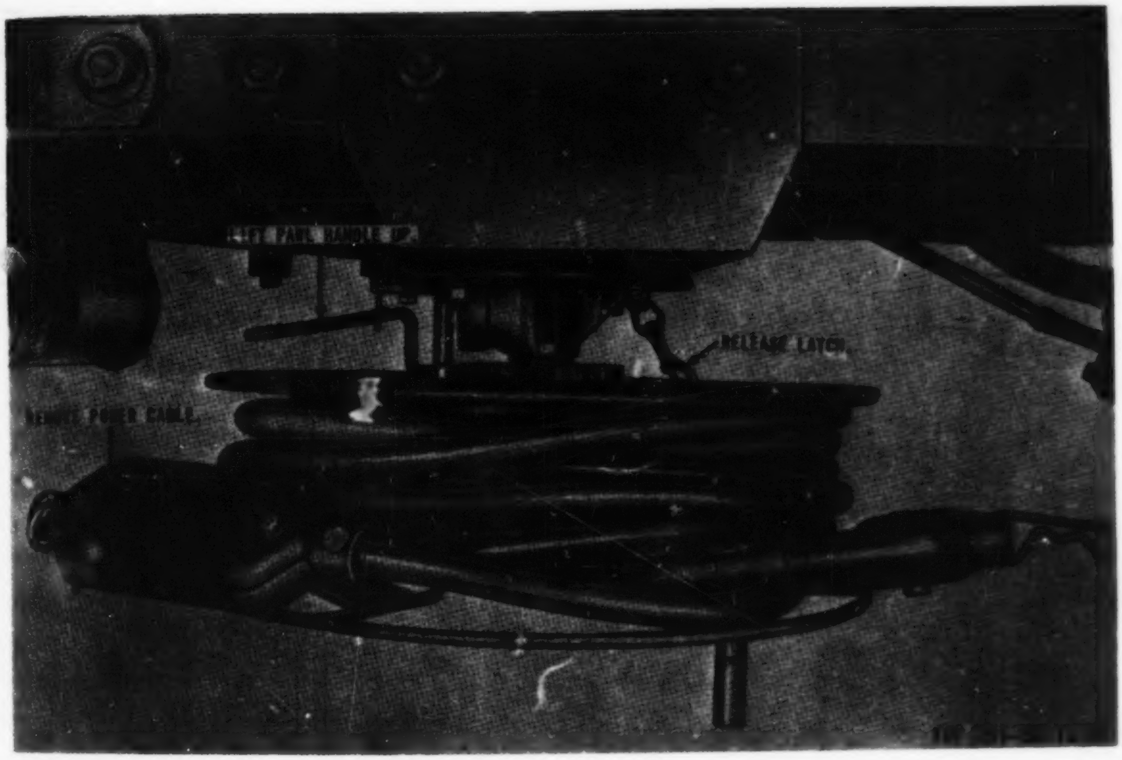


*Figure 47. Power cable removal and installation.*

*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged electrical conduit receptacle.

*c. Installation.* Install electrical conduit receptacle as illustrated in figure 53.

### 84. Tail and Blackout Lamp and Lens Replacement

*a Removal.* Remove lamp and lens as instructed in figure 54.

*b. Cleaning and Inspection.* Clean and inspect Replace damaged tail and blackout lamp and lens.

*c. Installation.* Install tail and blackout lamp and lens as illustrated in figure 54.

### 85. Tail and Blackout Light

*a. Removal.* Remove tail and blackout light as instructed in figure 55.

*b. Cleaning and Inspection.* Clean and inspect. Replace damaged tail and blackout light.

*c. Installation.* Install tail and blackout lamp light as illustrated in figure 55.

### 86. Clearance Lights, Reflectors, and Brackets

*a. Removal.* Remove clearance lights, reflectors, and brackets as instructed in figure 56.

*b. Cleaning and Inspection.* Clean and inspect. Replace damaged clearance lights, reflectors and brackets.

*c. Installation.* Install clearance lights, reflectors, and brackets as illustrated in figure 56.

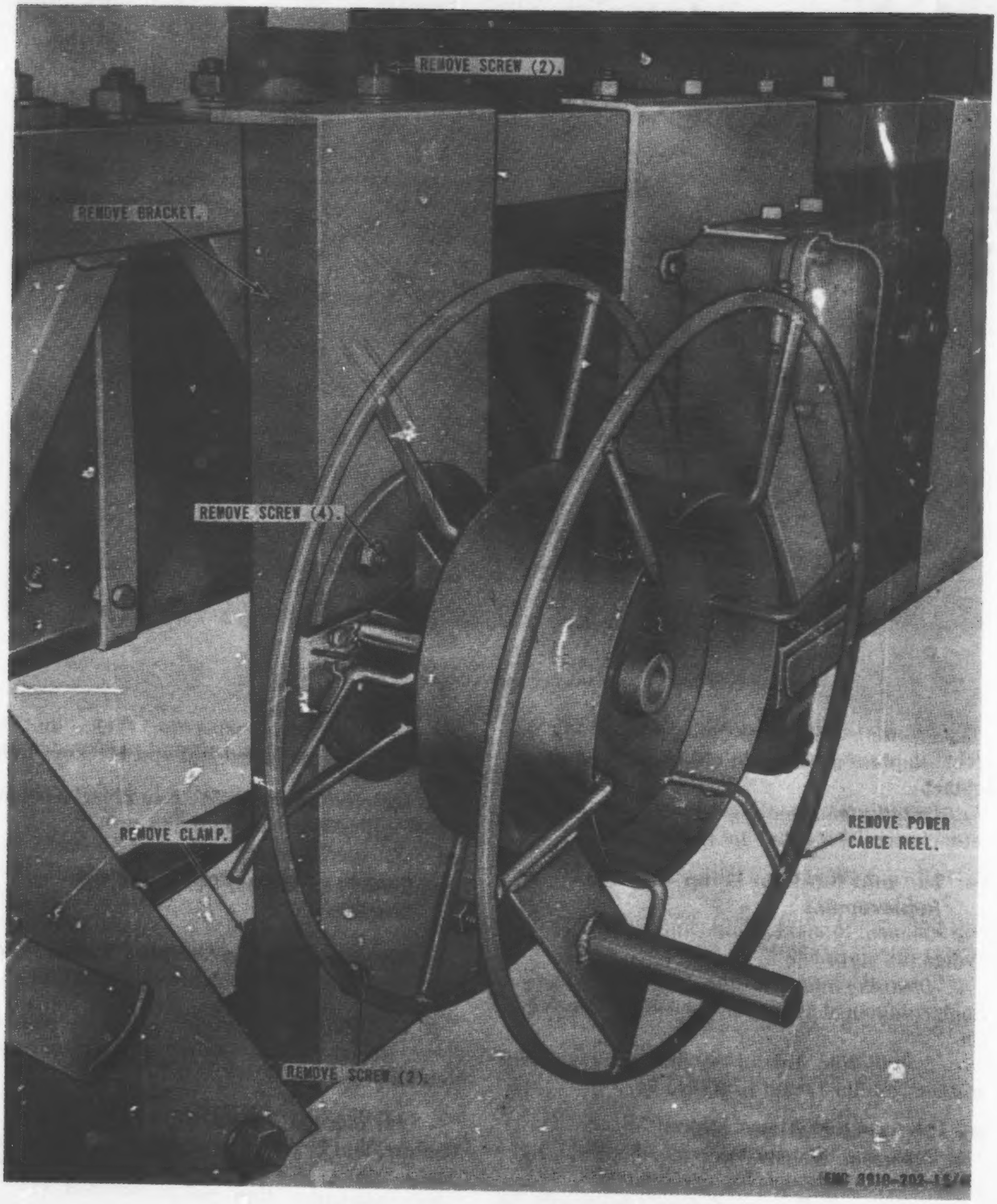

REMOVE SCREW (2).
REMOVE BRACKET.
REMOVE SCREW (4).
REMOVE CLAMP.
REMOVE POWER CABLE REEL.
REMOVE SCREW (2).
EMC 3910-202-15/

*Figure 48. Power cable reel bracket removal and installation.*

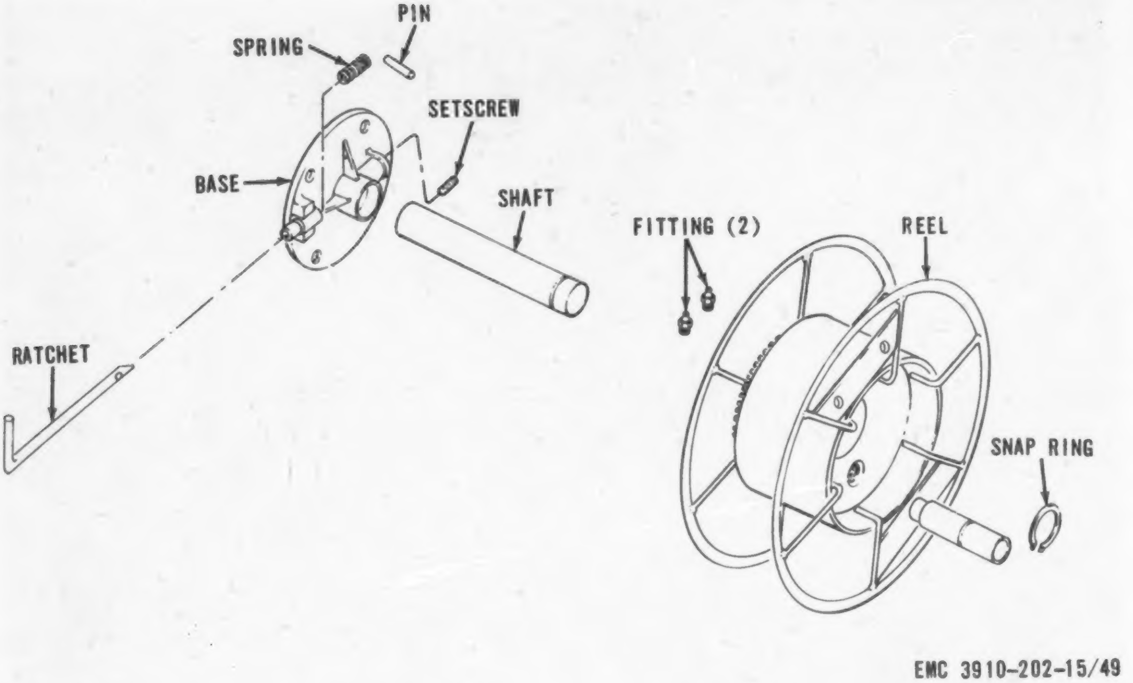
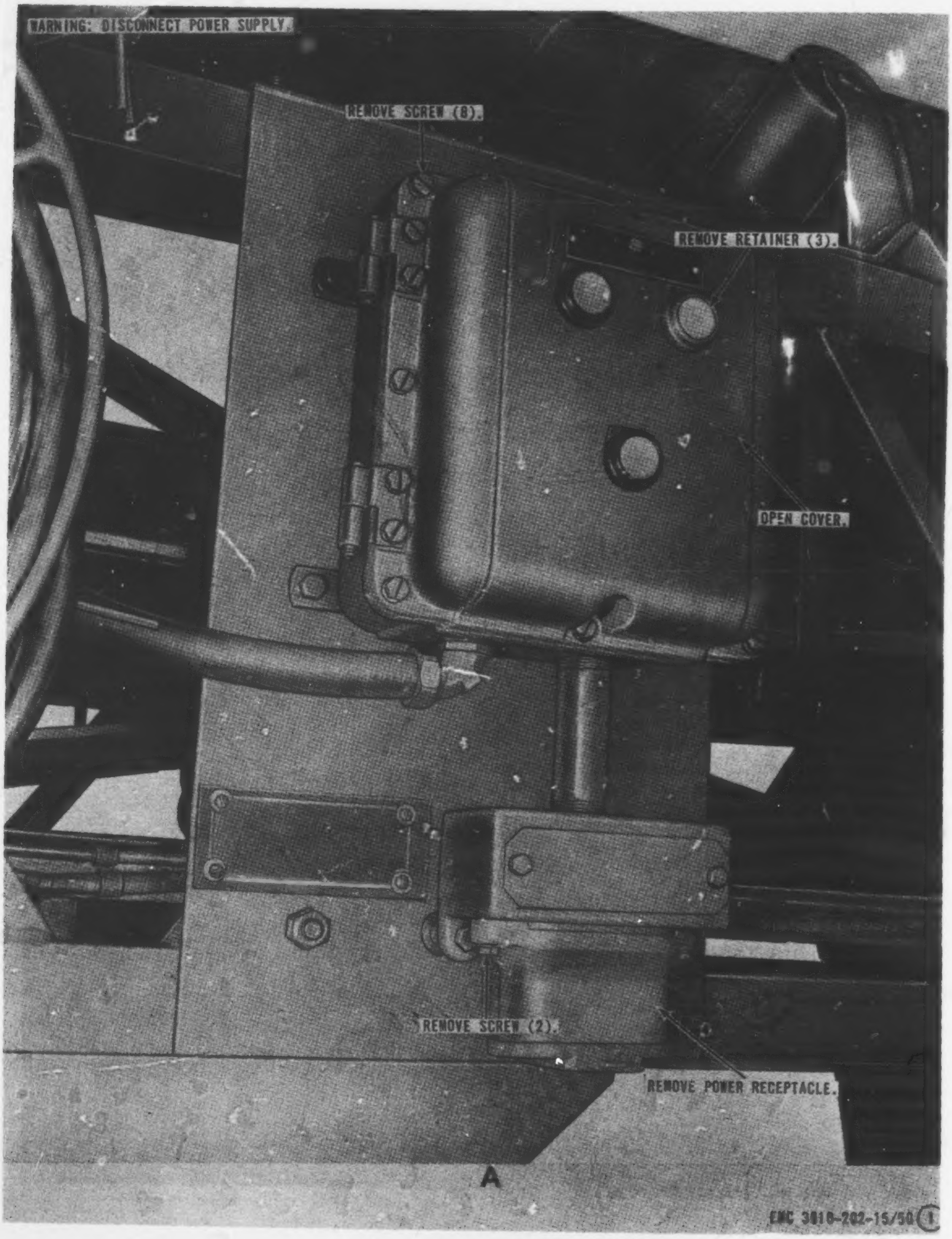
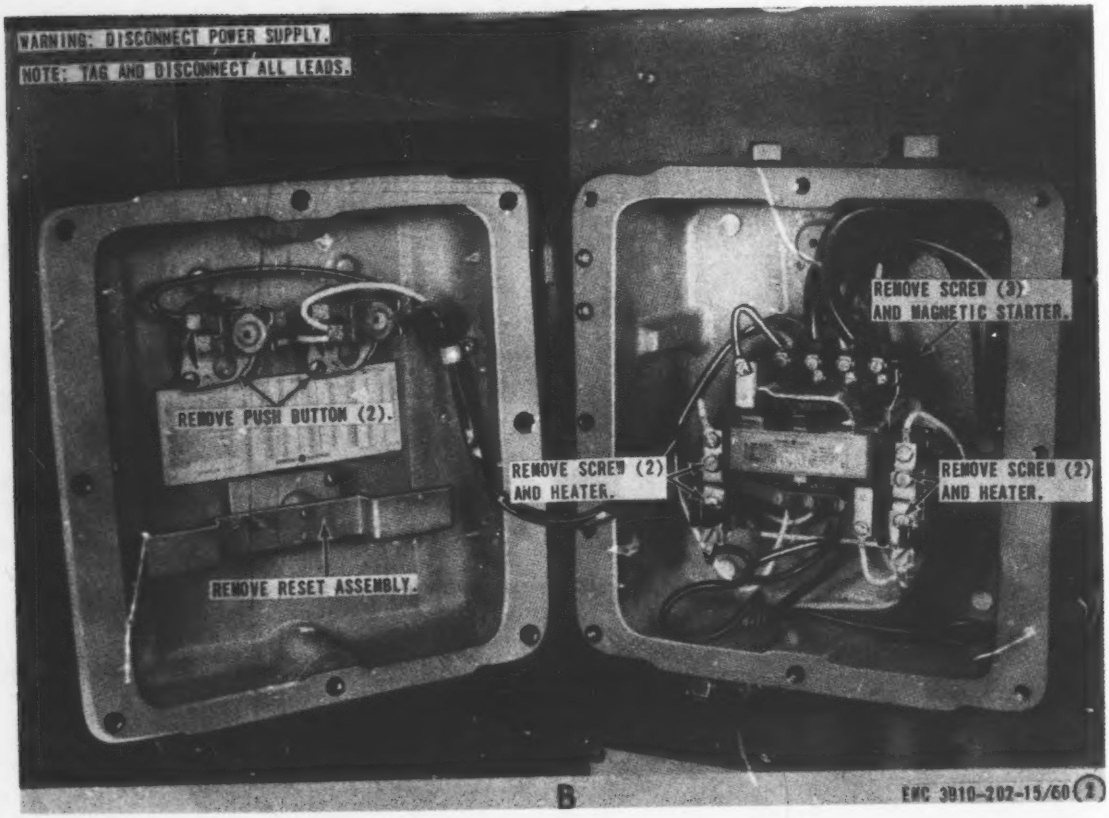

PIN
SPRING
SETSCREW
BASE
SHAFT
FITTING (2)
REEL
RATCHET
SNAP RING
EMC 3910-202-15/49

*Figure 49. Power cable reel, exploded view.*


WARNING: DISCONNECT POWER SUPPLY.
REMOVE SCREW (8).
REMOVE RETAINER (3).
OPEN COVER.
REMOVE SCREW (2).
REMOVE POWER RECEPTACLE.
A
ENC 3910-202-15/50 ①

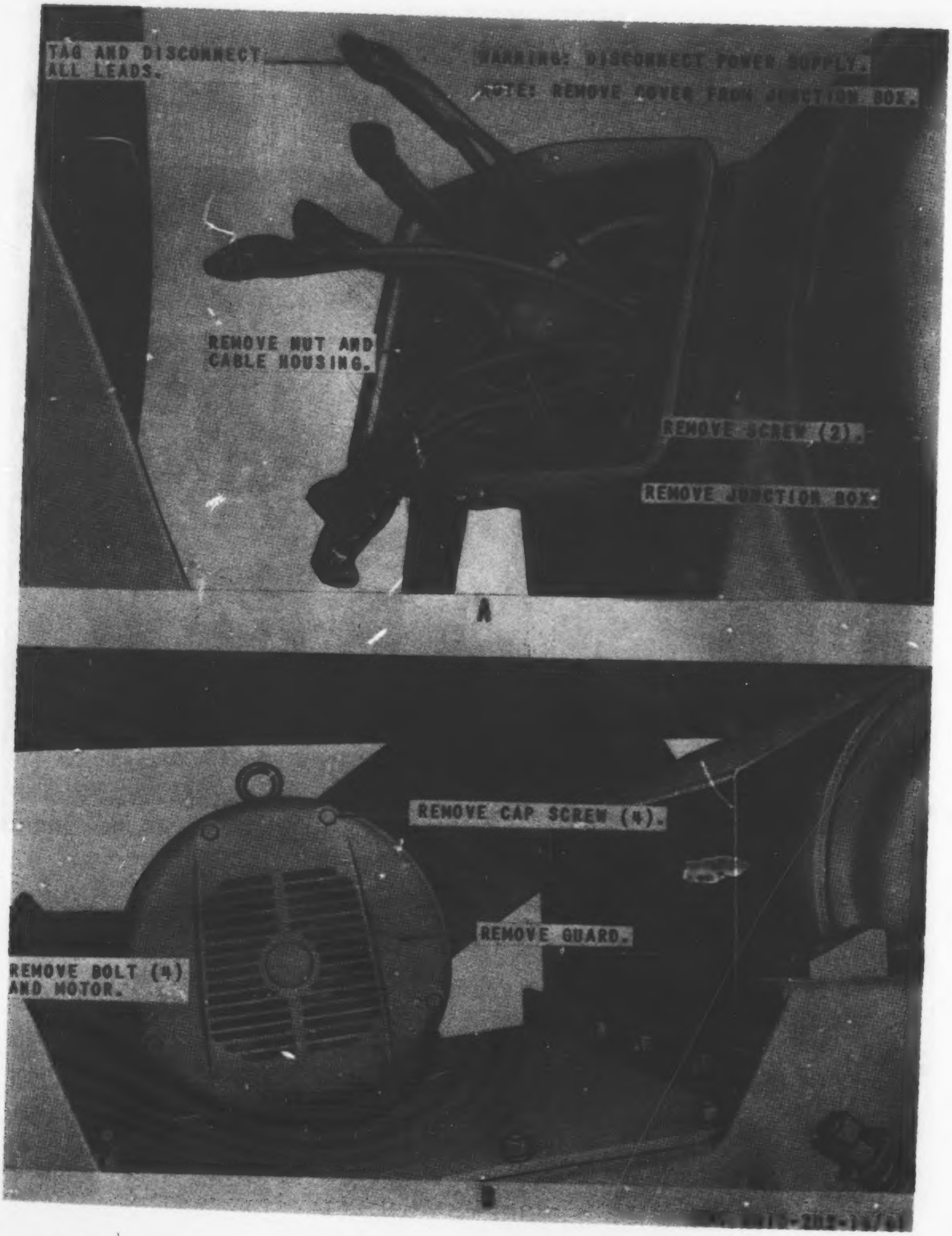
A—Button retainer and receptacle removal

*Figure 50. Magnetic starter, heater, push buttons, and power receptacle removal and installation.*


WARNING: DISCONNECT POWER SUPPLY.
NOTE: TAG AND DISCONNECT ALL LEADS.
REMOVE SCREW (3) AND MAGNETIC STARTER.
REMOVE PUSH BUTTON (2).
REMOVE SCREW (2) AND HEATER.
REMOVE SCREW (2) AND HEATER.
REMOVE RESET ASSEMBLY.
B
EMC 3910-202-15/60 ②

B—Starter, heaters, and buttons removal

*Figure 50—Continued.*


TAG AND DISCONNECT ALL LEADS.
WARNING: DISCONNECT POWER SUPPLY.
NOTE: REMOVE COVER FROM JUNCTION BOX.
REMOVE NUT AND CABLE HOUSING.
REMOVE SCREW (2).
REMOVE JUNCTION BOX.
A
REMOVE CAP SCREW (4).
REMOVE GUARD.
REMOVE BOLT (4) AND MOTOR.
B

A—Guard removal

B—Junction box and motor removal

*Figure 51. Electric motor, junction box, and guard removal and installation.*

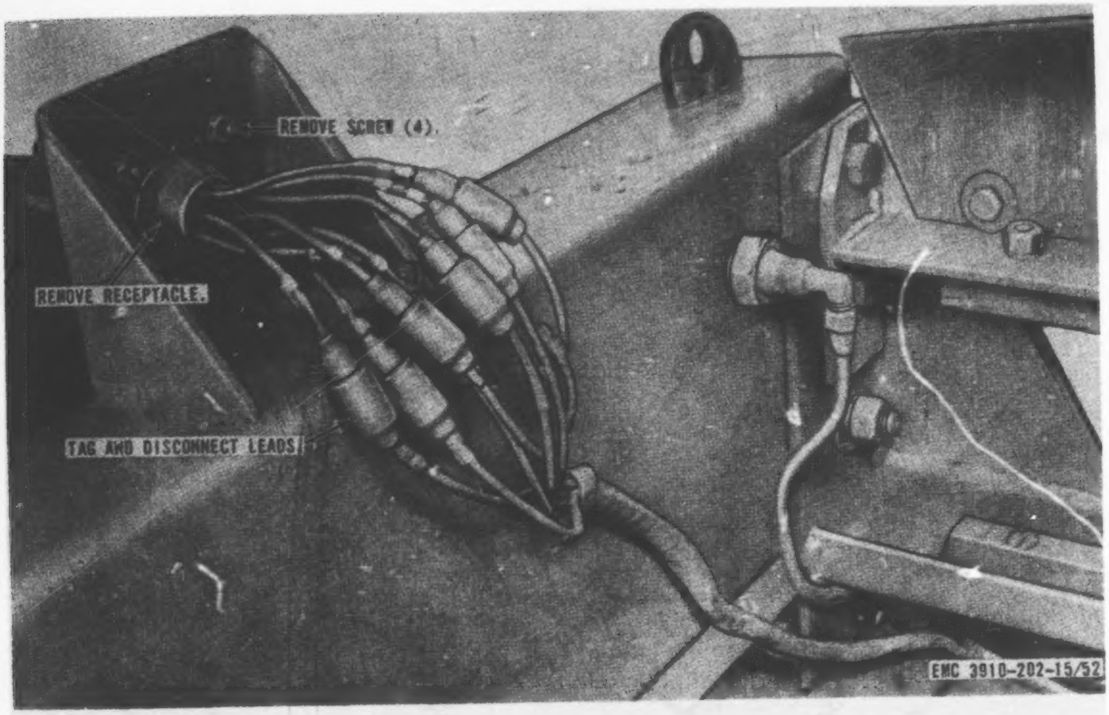

REMOVE SCREW (4).
REMOVE RECEPTACLE.
TAG AND DISCONNECT LEADS.
EMC 3910-202-15/52

*Figure 52. Trailer receptacle removal and installation.*

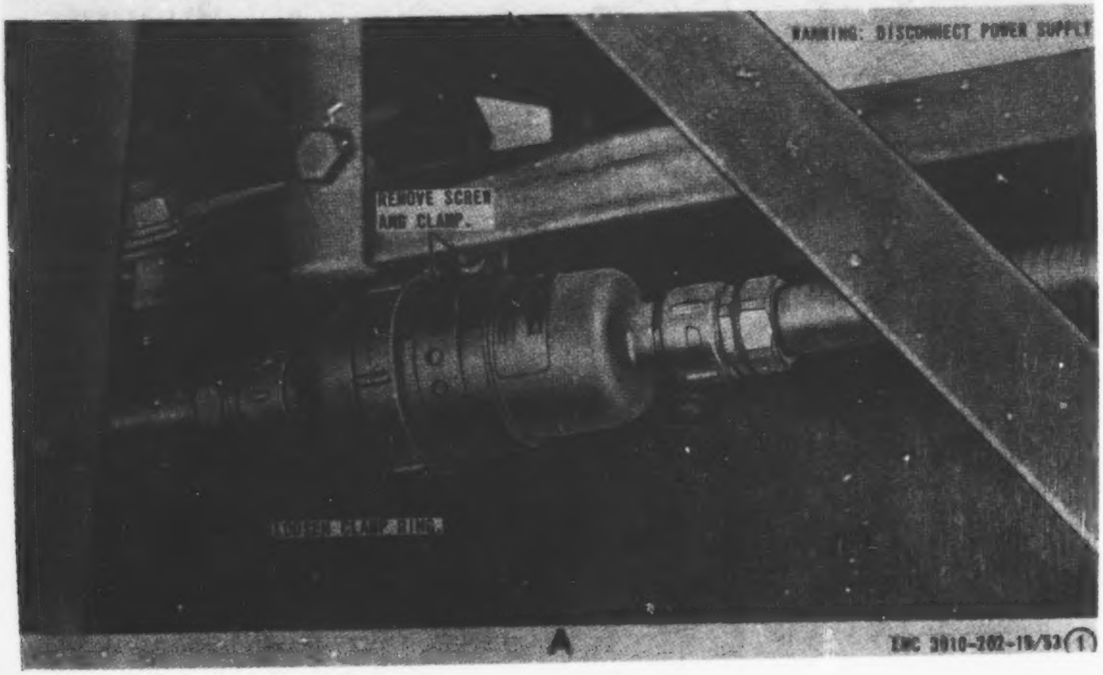

WARNING: DISCONNECT POWER SUPPLY
REMOVE SCREW AND CLAMP.
LOOSEN CLAMP RING.
A
EMC 3910-202-15/53 ①

*Figure 53. Electrical conduit receptacle removal and installation.*

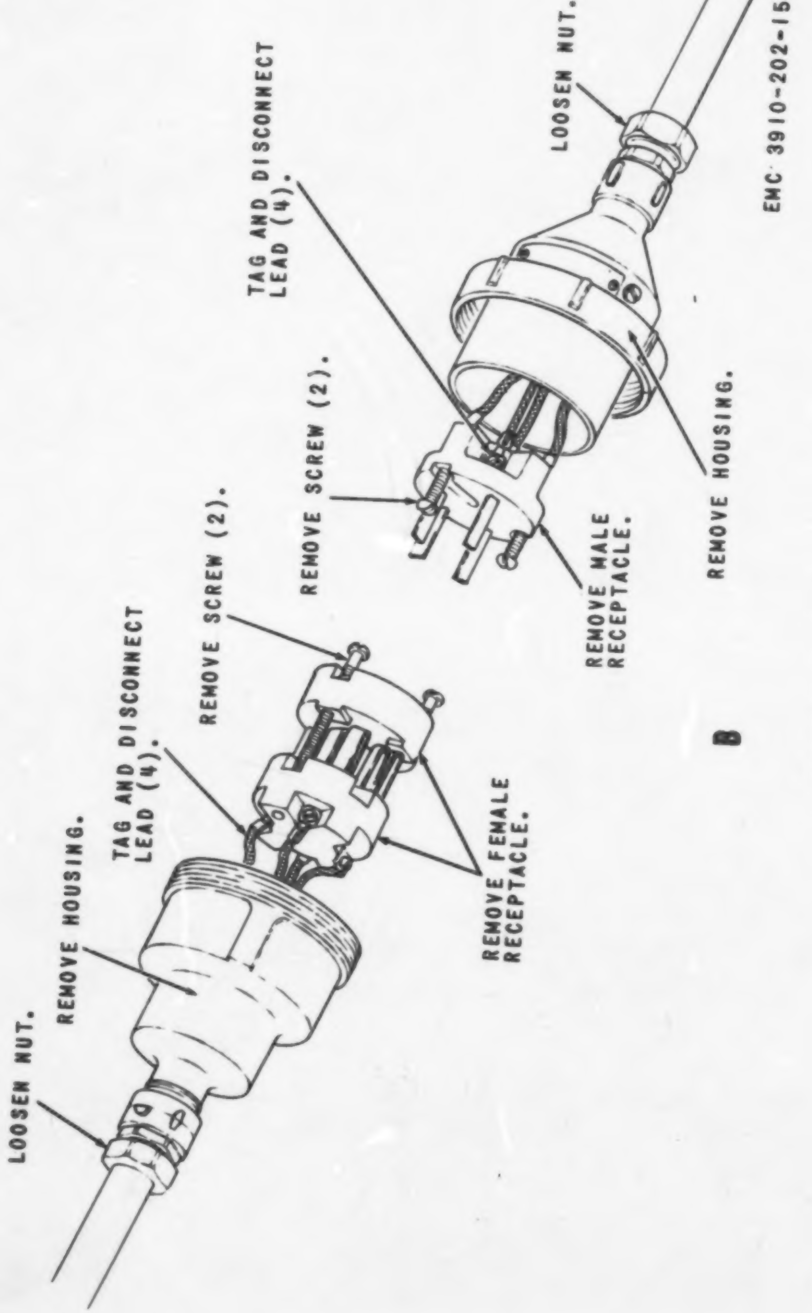
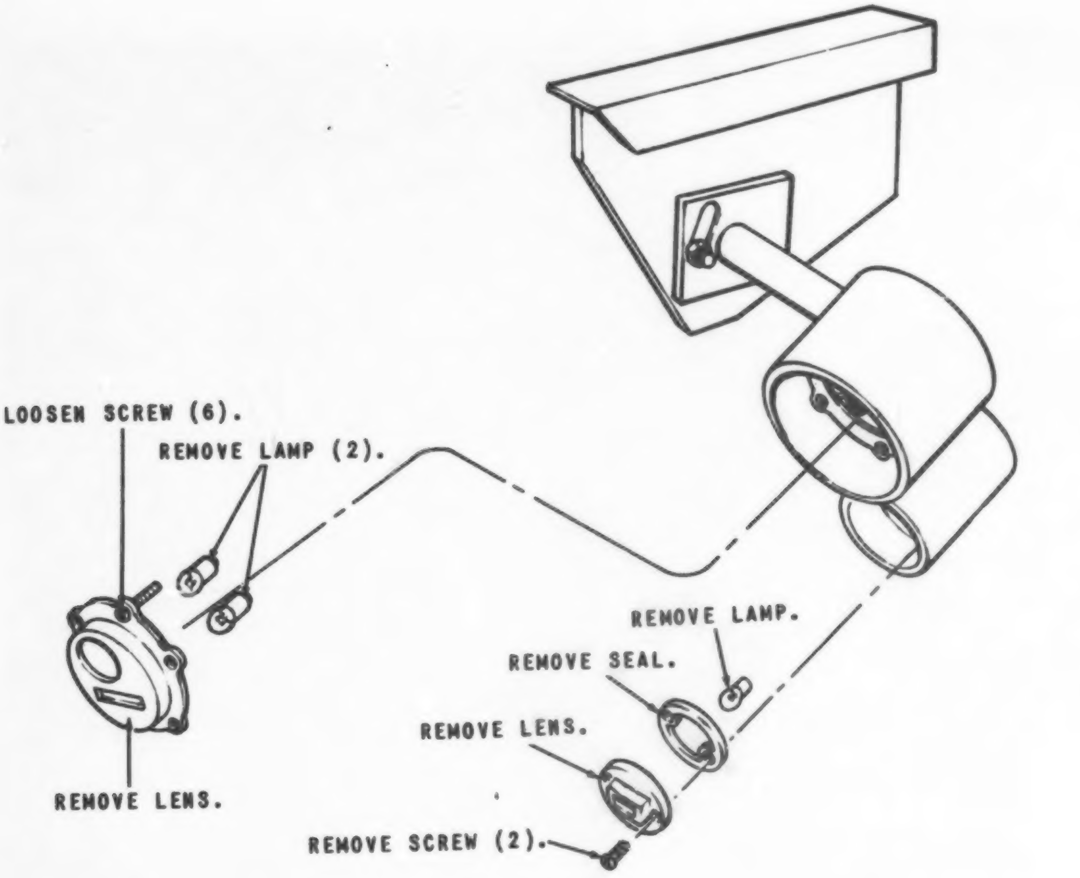

LOOSEN NUT.
REMOVE HOUSING.
TAG AND DISCONNECT LEAD (4).
REMOVE SCREW (2).
REMOVE FEMALE RECEPTACLE.
REMOVE SCREW (2).
TAG AND DISCONNECT LEAD (4).
REMOVE MALE RECEPTACLE.
REMOVE HOUSING.
LOOSEN NUT.
EMC 3910-202-15/53 ②
B

*Figure 53—Continued.*


LOOSEN SCREW (6).
REMOVE LAMP (2).
REMOVE LENS.
REMOVE LAMP.
REMOVE SEAL.
REMOVE LENS.
REMOVE SCREW (2).

NOTE: REMOVE LENS AND LAMPS ON OPPOSITE SIDE IN A SIMILAR MANNER.

EMC 3910-202-15/54

*Figure 54. Tail and blackout lamp and lens replacement.*

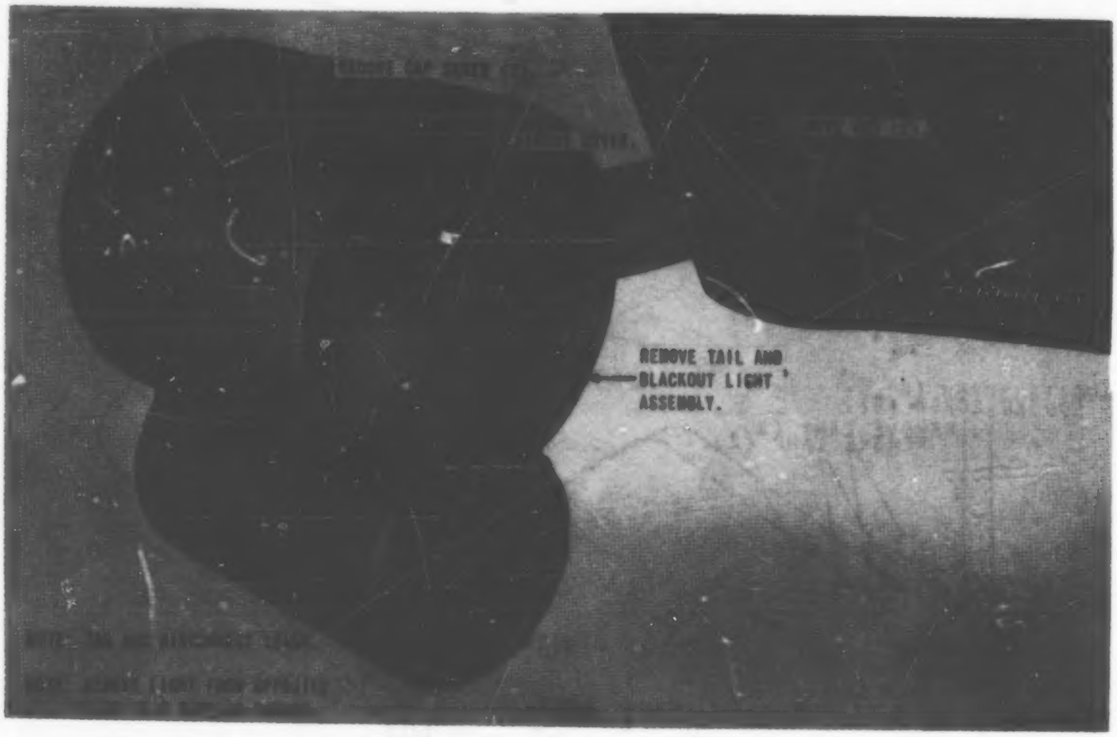
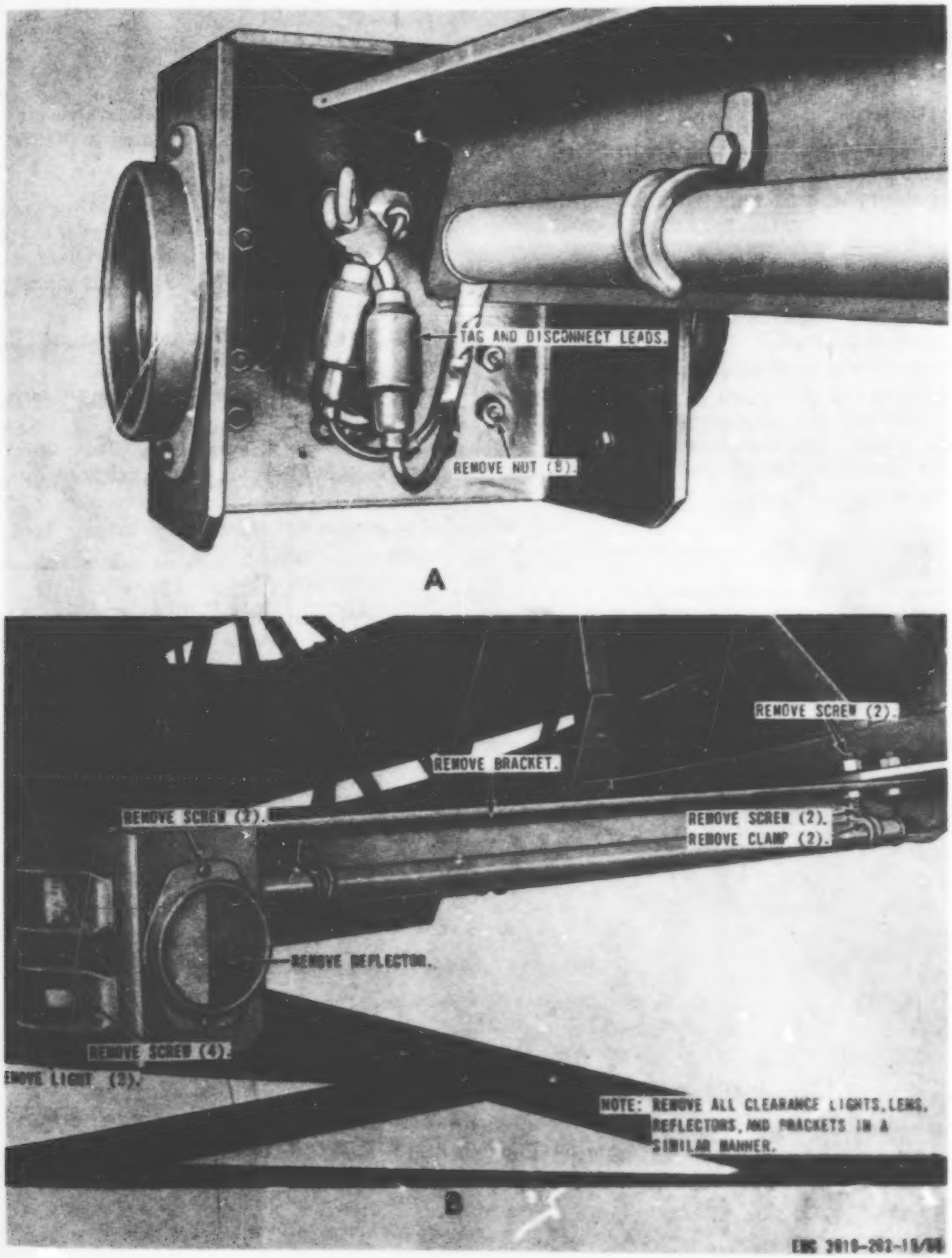

REMOVE TAIL AND
BLACKOUT LIGHT
ASSEMBLY.

*Figure 55. Tail and blackout light removal and installation.*


TAG AND DISCONNECT LEADS.
REMOVE NUT (2).
A
REMOVE SCREW (2).
REMOVE BRACKET.
REMOVE SCREW (2).
REMOVE SCREW (2).
REMOVE CLAMP (2).
REMOVE REFLECTOR.
REMOVE SCREW (4).
EMOVE LIGHT (2).
NOTE: REMOVE ALL CLEARANCE LIGHTS, LENS, REFLECTORS, AND BRACKETS IN A SIMILAR MANNER.
B
EMC 3910-202-15/56

A—Lead removal B—Light, reflector, and bracket removal

*Figure 56. Clearance lights, reflectors, and bracket removal and installation.*

## Section X. AIR SYSTEM

### 87. General

The air system consists of the air filter, relay valve, reservoir, hose, lines, and fitting. These components are used only when towing the conveyor from one location to another.

### 88. Air Filter

*a. Service.* Service the air filters as instructed in figure 57.

*b. Removal.* Remove the air filters as instructed in figure 57.

*c. Cleaning and Inspection.* Clean and inspect. Replace a damaged air filter.

*d. Installation.* Install the air filter as illustrated in figure 57.

### 89. Relay Valve, Air Reservoir, and Fittings

*a. Removal.* Remove the relay valve, air reservoir and fittings as instructed in figure 58.

*b. Cleaning and Inspection.* Clean and inspect. Replace a defective relay valve, air reservoir, and fittings.

*c. Installation.* Install the relay valve, air reservoir, and fittings as illustrated in figure 58.

### 90. Air Hoses, Lines, and Fittings

*a. Removal.*

(1) Disconnect the air hose and lines at the relay valve (par. 89) and at the air filter (par. 88).

(2) Remove the air hose, fittings, and lines as illustrated in figure 59.

*b. Disassembly.* Disassemble the air hose as illustrated in figure 60.

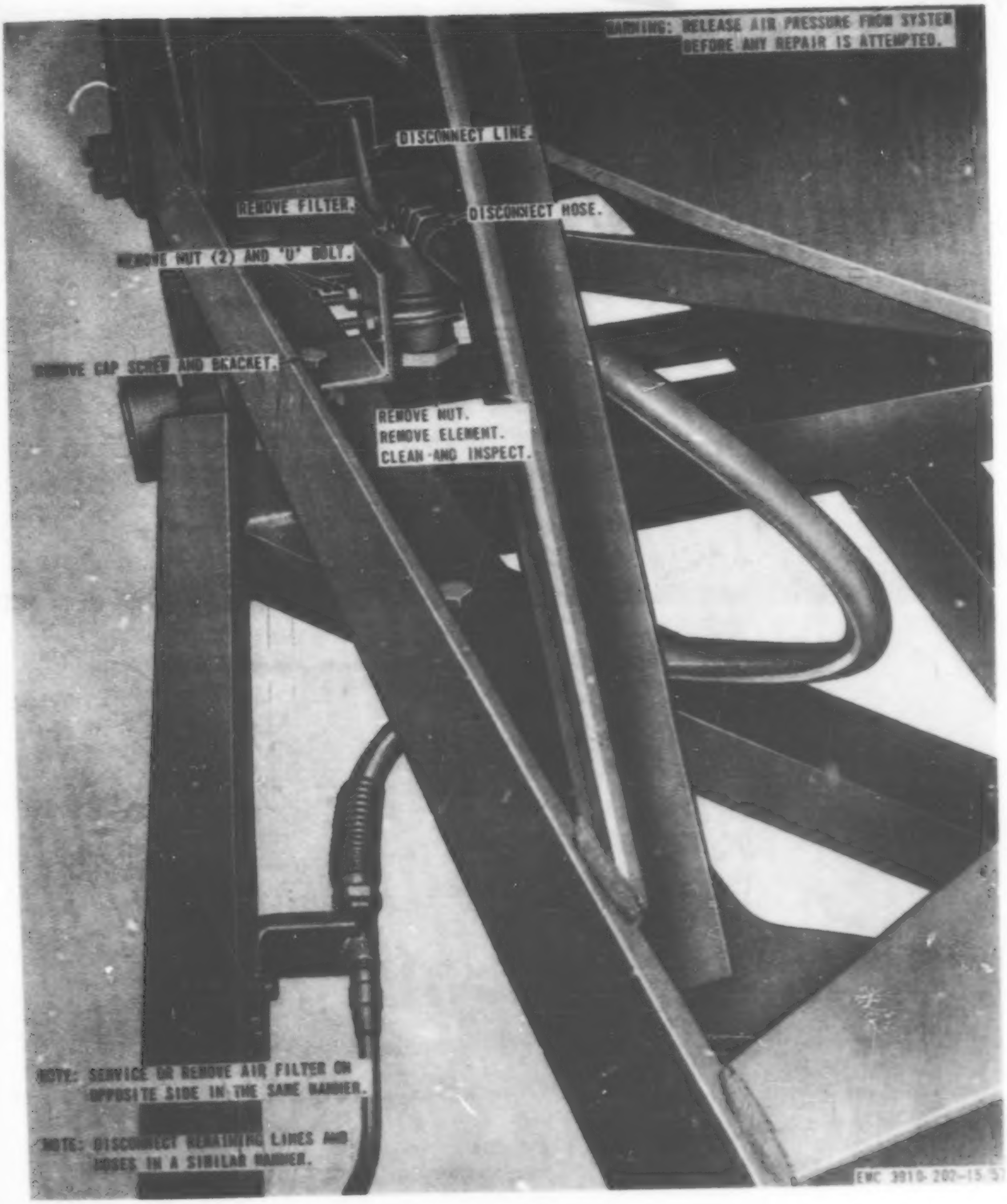
*c. Cleaning and Inspection.* Clean and inspect. Replace or repair a damaged hose, line, or fitting.

*d. Reassembly.* Reassemble the air hose as illustrated in figure 60.

*e. Installation.*

(1) Install the hose, lines, and fittings as illustrated in figure 59.

(2) Connect all hose, lines and fittings, at the relay valve (par. 89) and the air filter (par. 88). Refer to figure 6.



WARNING: RELEASE AIR PRESSURE FROM SYSTEM BEFORE ANY REPAIR IS ATTEMPTED.

DISCONNECT LINE.

REMOVE FILTER.

DISCONNECT HOSE.

REMOVE NUT (2) AND 'U' BOLT.

REMOVE CAP SCREW AND BRACKET.

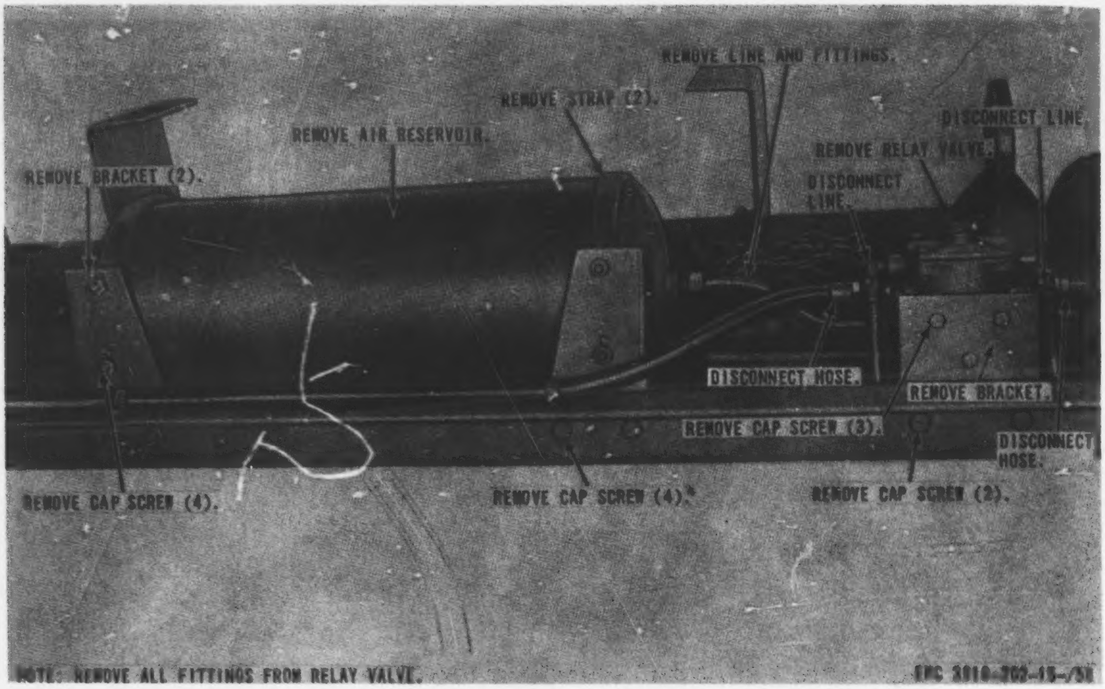
REMOVE NUT.
REMOVE ELEMENT.
CLEAN AND INSPECT.

NOTE: SERVICE OR REMOVE AIR FILTER ON OPPOSITE SIDE IN THE SAME MANNER.

NOTE: DISCONNECT REMAINING LINES AND HOSES IN A SIMILAR MANNER.

EMC 3910-202-15/57

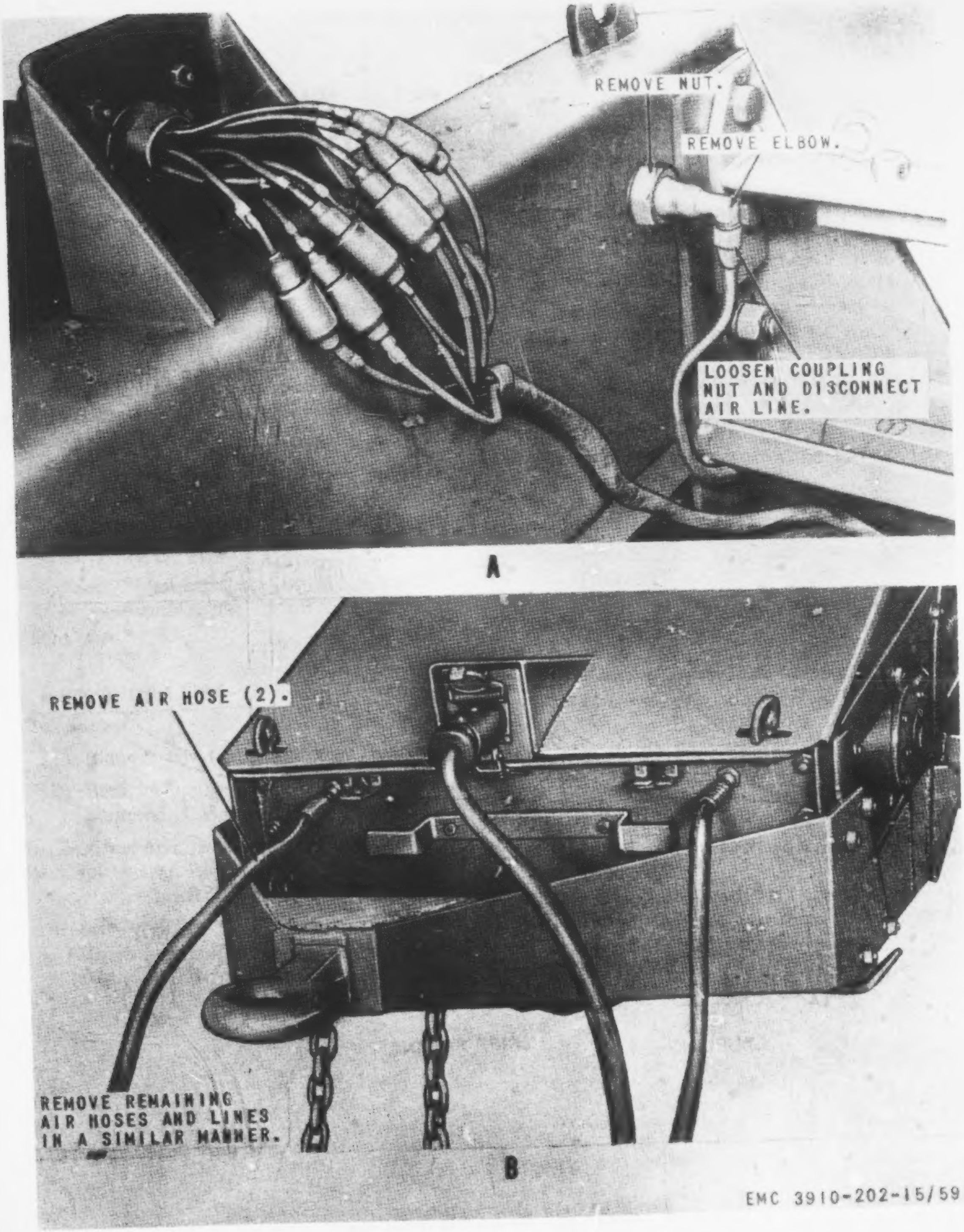
*Figure 57. Air filter service, removal, and installation.*


REMOVE LINE AND FITTINGS.
REMOVE STRAP (2).
DISCONNECT LINE.
REMOVE AIR RESERVOIR.
REMOVE RELAY VALVE.
REMOVE BRACKET (2).
DISCONNECT LINE.
DISCONNECT HOSE.
REMOVE BRACKET.
REMOVE CAP SCREW (3).
DISCONNECT HOSE.
REMOVE CAP SCREW (4).
REMOVE CAP SCREW (4).
REMOVE CAP SCREW (2).

NOTE: REMOVE ALL FITTINGS FROM RELAY VALVE.

EMC 3910-202-15-/58

*Figure 58. Relay valve, air reservoir, and fittings removal and installation.*

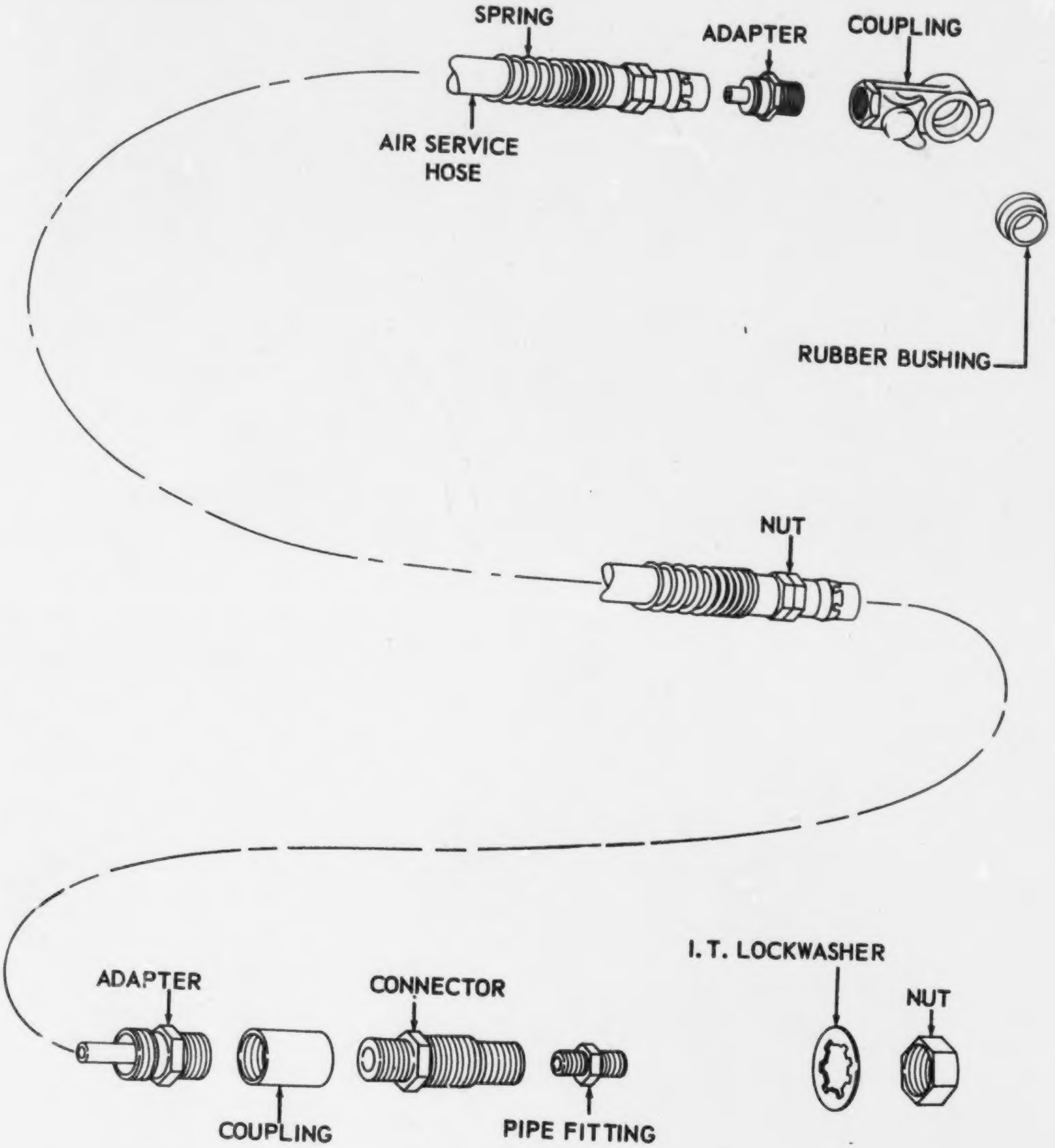

REMOVE NUT.
REMOVE ELBOW.
LOOSEN COUPLING NUT AND DISCONNECT AIR LINE.
A
REMOVE AIR HOSE (2).
REMOVE REMAINING AIR HOSES AND LINES IN A SIMILAR MANNER.
B
EMC 3910-202-15/59

A—Fittings removal

B—Air hose removal

*Figure 59. Air hose, lines and fittings removal and installation.*

best copy available


SPRING
ADAPTER
COUPLING
AIR SERVICE HOSE
RUBBER BUSHING
NUT
I. T. LOCKWASHER
ADAPTER
CONNECTOR
NUT
COUPLING
PIPE FITTING

EMC 3910-202-15/60

*Figure 60. Air hose, exploded view.*

## Section XI. WHEEL ASSEMBLY

### 91. General

The wheel assembly consists of the tire, tube, rim, ring, drum, seal, bearings, and brakeshoes. The wheel bearings are the roller bearing type with adjusting nuts and locks. The drums and hubs are for disk type rims and provide a braking surface for the brake linings.

### 92. Tire, Tube, Rim, and Hubcap

*a. Removal.* Remove the tire, tube, rim, and hubcap as instructed in figure 61. Refer to TM 9–1870–1.

***Warning:*** **Release all air pressure from tire before attempting to remove the tire from the rim.**

*b. Cleaning and Inspection.* Clean and inpect. Replace or repair any damaged parts.

*c. Installation.* Install the tire, tube, rim and hubcap as illustrated in figure 61.

***Warning:*** **When inflating tire to its rated 80 psi after reassembly, use an inflating cage or safety chain.**

### 93. Bearing and Seal

*a. Removal.*

(1) Remove tire, tube, and rim (par. 92).

(2) Remove the seal and bearings as instructed in figure 62.

*b. Cleaning and Inspection.* Clean and inspect. Replace seal. Replace pitted, scored, overheated, or worn bearings.

*c. Installation.*

(1) During installation of bearings and seal as illustrated in figure 62, lubricate as instructed in LO 5–3910–202–15.

(2) Install the tire, tube, and rim (par. 92).

### 94. Hub, Adapter, and Drum

*a. Removal.*

(1) Remove tire, tube, rim, and hubcap (par. 92).

(2) Remove the outer bearing (par. 93).

(3) Remove the hub, drum, and adapter as instructed in figure 63.

(4) Remove inner bearing and seal (par. 99).

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair all damaged parts.

*c. Installation.*

(1) Install the inner bearing and seal in the hub (par. 93).

(2) Install the hub, adapter, and drums as illustrated in figure 63.

(4) Install tire, tube, rim, and hubcap (par. 92).

### 95. Brakeshoes

*a. Removal.*

(1) Remove the rim and hubcap (par. 92).

(2) Remove hub and drum (par. 94).

(3) Remove the brakeshoes as instructed in figure 64.

*b. Cleaning and Inspection.* Clean and inspect. Replace or repair all defective parts.

*c. Installation.*

(1) Install the brakeshoes as illustrated in figure 64.

(2) Install hub and drum (par. 94).

(3) Install the rim and hubcap (par. 92).

*d. Adjustment.* Adjust the brakes as instructed in figure 65.

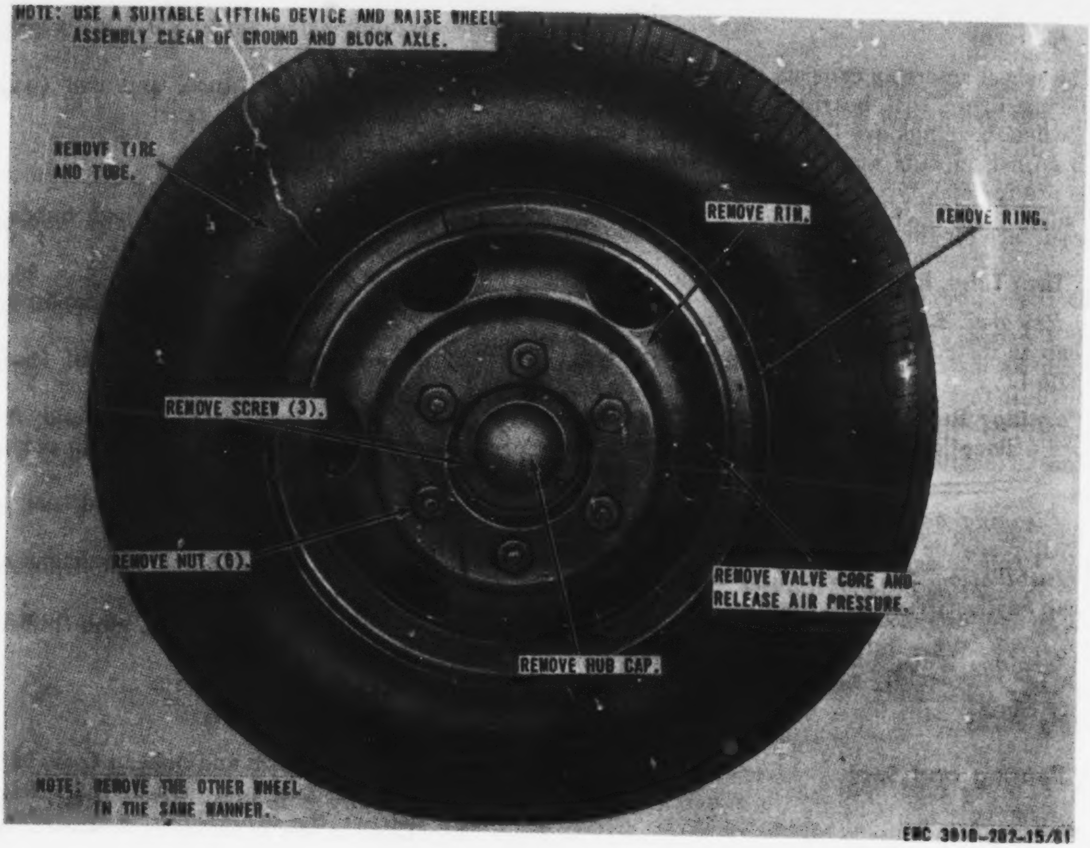
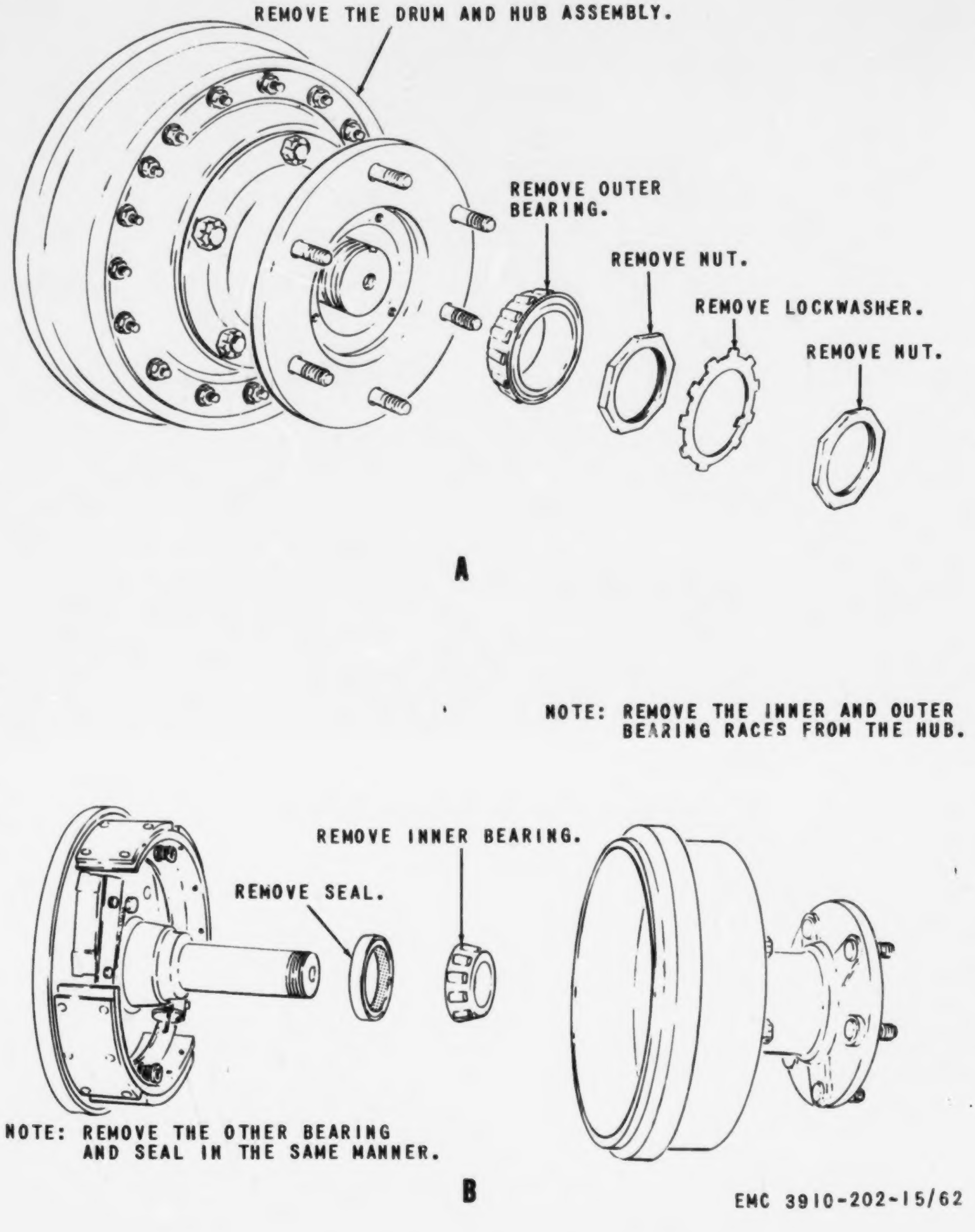

NOTE: USE A SUITABLE LIFTING DEVICE AND RAISE WHEEL ASSEMBLY CLEAR OF GROUND AND BLOCK AXLE.
REMOVE TIRE AND TUBE.
REMOVE RIM.
REMOVE RING.
REMOVE SCREW (3).
REMOVE NUT (6).
REMOVE VALVE CORE AND RELEASE AIR PRESSURE.
REMOVE HUB CAP.
NOTE: REMOVE THE OTHER WHEEL IN THE SAME MANNER.
EMC 3910-202-15/61

*Figure 61. Tire, tube, rim, and hubcap removal and installation.*


REMOVE THE DRUM AND HUB ASSEMBLY.
REMOVE OUTER BEARING.
REMOVE NUT.
REMOVE LOCKWASHER.
REMOVE NUT.
A
NOTE: REMOVE THE INNER AND OUTER BEARING RACES FROM THE HUB.
REMOVE INNER BEARING.
REMOVE SEAL.
NOTE: REMOVE THE OTHER BEARING AND SEAL IN THE SAME MANNER.
B
EMC 3910-202-15/62

A—Outer bearing

B—Inner bearing and seal

*Figure 62. Bearing and seal removal and installation.*

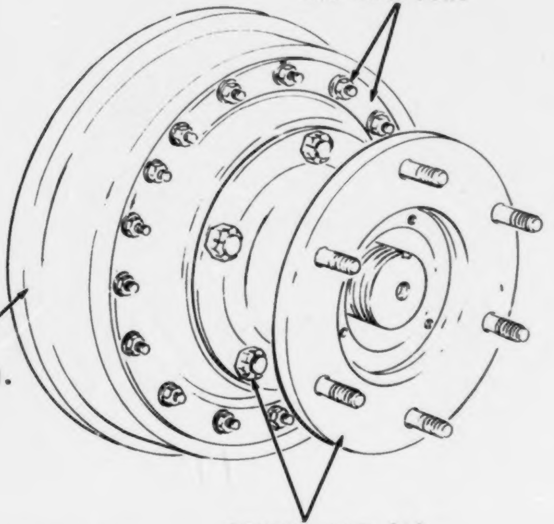

REMOVE NUT (16)
AND ADAPTER.
REMOVE DRUM.
NOTE: REMOVE THE OTHER HUB, ADAPTER AND DRUM IN THE SAME MANNER.
REMOVE NUT (6)
AND HUB.
EMC 3910-202-15/63

*Figure 63. Hub, adapter, and drum removal and installation.*

CAUTION: REPLACE BRAKESHOES BEFORE RIVETS BEGIN TO CONTACT THE BRAKE DRUM.

REMOVE BRAKESHOE
REMOVE SPRING
REMOVE BRAKESHOE

NOTE: REMOVE THE OTHER BRAKESHOES IN THE SAME MANNER.

*Figure 64. Brakeshoes removal and installation.*

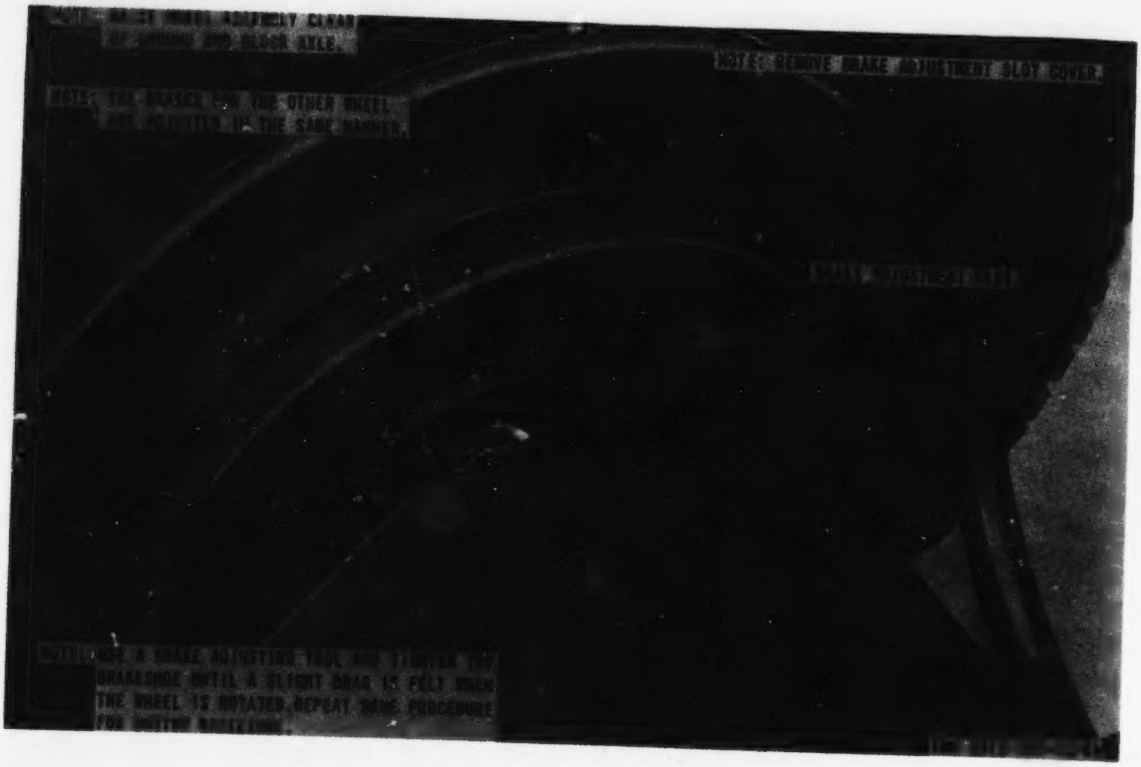

NOTE: RAISE WHEEL ASSEMBLY CLEAR OF GROUND AND BLOCK AXLE.
NOTE: THE BRAKES FOR THE OTHER WHEEL ARE ADJUSTED IN THE SAME MANNER.
NOTE: REMOVE BRAKE ADJUSTMENT SLOT COVER.
BRAKE ADJUSTING SLOT
NOTE: USE A BRAKE ADJUSTING TOOL AND TIGHTEN THE BRAKESHOE UNTIL A SLIGHT DRAG IS FELT WHEN THE WHEEL IS ROTATED. REPEAT SAME PROCEDURE FOR [illegible]

*Figure 65. Brake adjustment.*

# Section XII. PUSH ARMS, AXEL ASSEMBLY, AND FRAME CROSS BRACES

## 96. General

The push arms and axle assembly consists of the lower and upper push arms and the axle. The upper push arm is used to support the conveyor in an elevated position. The lower push arm and axle assembly is for the purpose of portable movement. The cross braces installed on the top and bottom of the frame add rigidity to the conveyor frame.

## 97. Frame Cross Braces

*a. Removal.* Remove the top and bottom frame cross braces from the main frames.

*b. Cleaning and Inspection.* Clean and inspect. Replace all damaged braces.

*c. Installation.* Install the top and bottom cross braces to the main frames.

## 98. Lower Push Arm

*a. Removal.*

(1) Remove the relay valve and air reservoir (par. 89) and air hoses, lines and fittings (par. 90).

(2) Remove the lower push arm as instructed in figure 66.

*b. Cleaning, Inspection, and Repair.* Clean and inspect. Replace or repair a damaged lower push arm.

*c. Installation.*

(1) Install the lower push arm as illustrated in figure 66.

(2) Install the air hose, lines and fittings (par. 90) and air reservoir and relay valve (par. 89).

## 99. Upper Push Arm

*a. Removal.*

(1) Remove the hydraulic cylinder (par. 75) and hydarulic oil tank (par. 76).

(2) Remove the upper push arm as instructed in figure 67.

*b. Cleaning, Inspection, and Repair.* Clean and inspect. Replace or repair a damaged upper push arm.

*c. Installation.*

(1) Install the upper push arm as illustrated in figure 67.

(2) Install the hydraulic oil tank (par. 76) and hydraulic cylinder (par. 75).

## 100 Axel Assembly and Lockpins

*a. Removal.*

(1) Use a suitable lifting device and raise the conveyor.

(2) Disconnect the lower push arm (par. 98) and upper push arm (par. 99).

(3) Remove the axle assembly and lockpin.

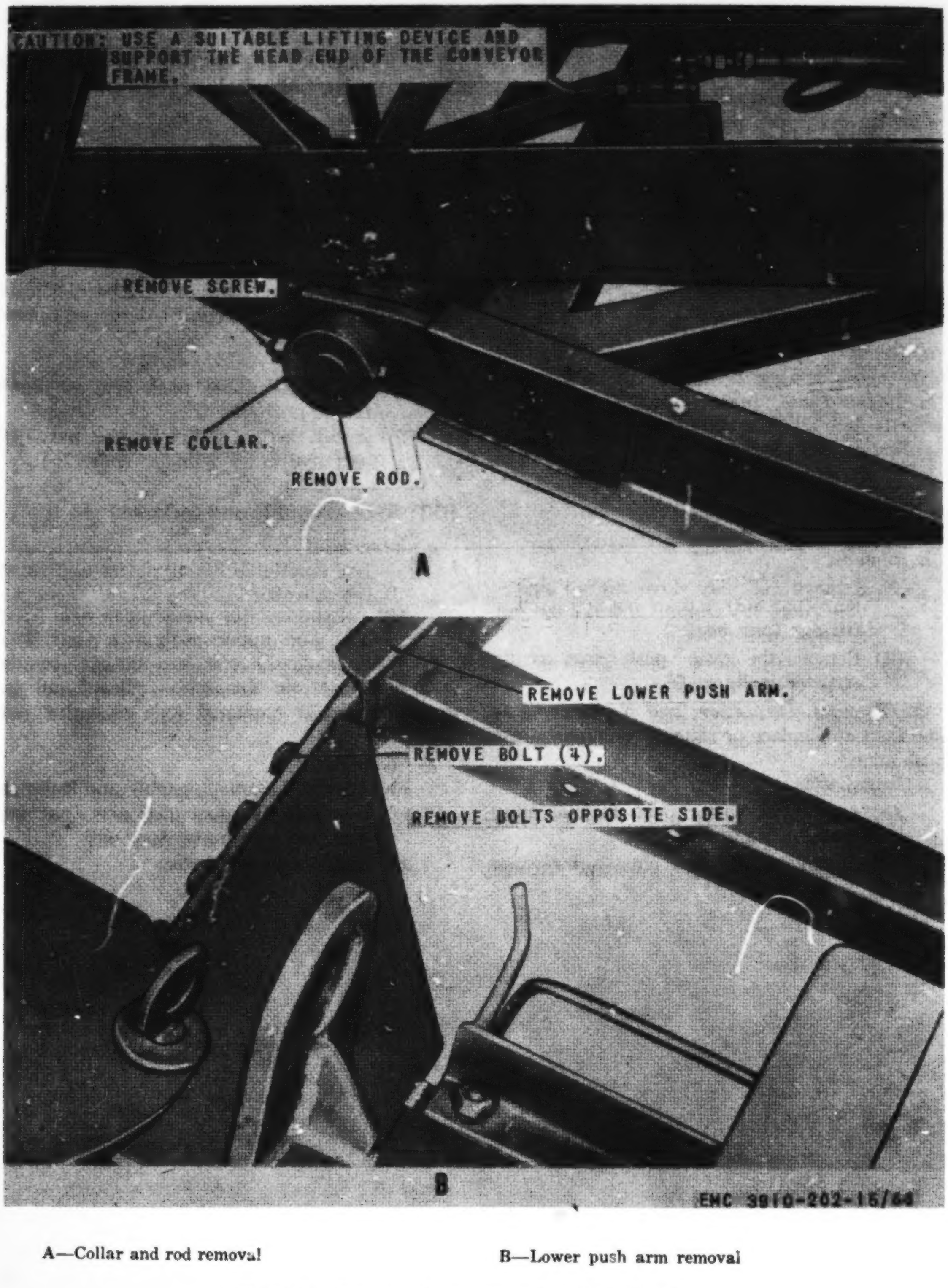
*b. Cleaning and Inspection.* Clean and inspect. Replace a damaged axle assembly and lockpins.

*c. Installation.*

(1) Install the axle assembly and lockpins.

(2) Connect the upper push arm (par. 99) and lower push arm (par. 98).

(3) Remove lifting device.


CAUTION: USE A SUITABLE LIFTING DEVICE AND SUPPORT THE HEAD END OF THE CONVEYOR FRAME.
REMOVE SCREW.
REMOVE COLLAR.
REMOVE ROD.
A
REMOVE LOWER PUSH ARM.
REMOVE BOLT (4).
REMOVE BOLTS OPPOSITE SIDE.
B
EMC 3910-202-15/66

A—Collar and rod removal

B—Lower push arm removal

*Figure 66. Lower push arm removal and installation.*

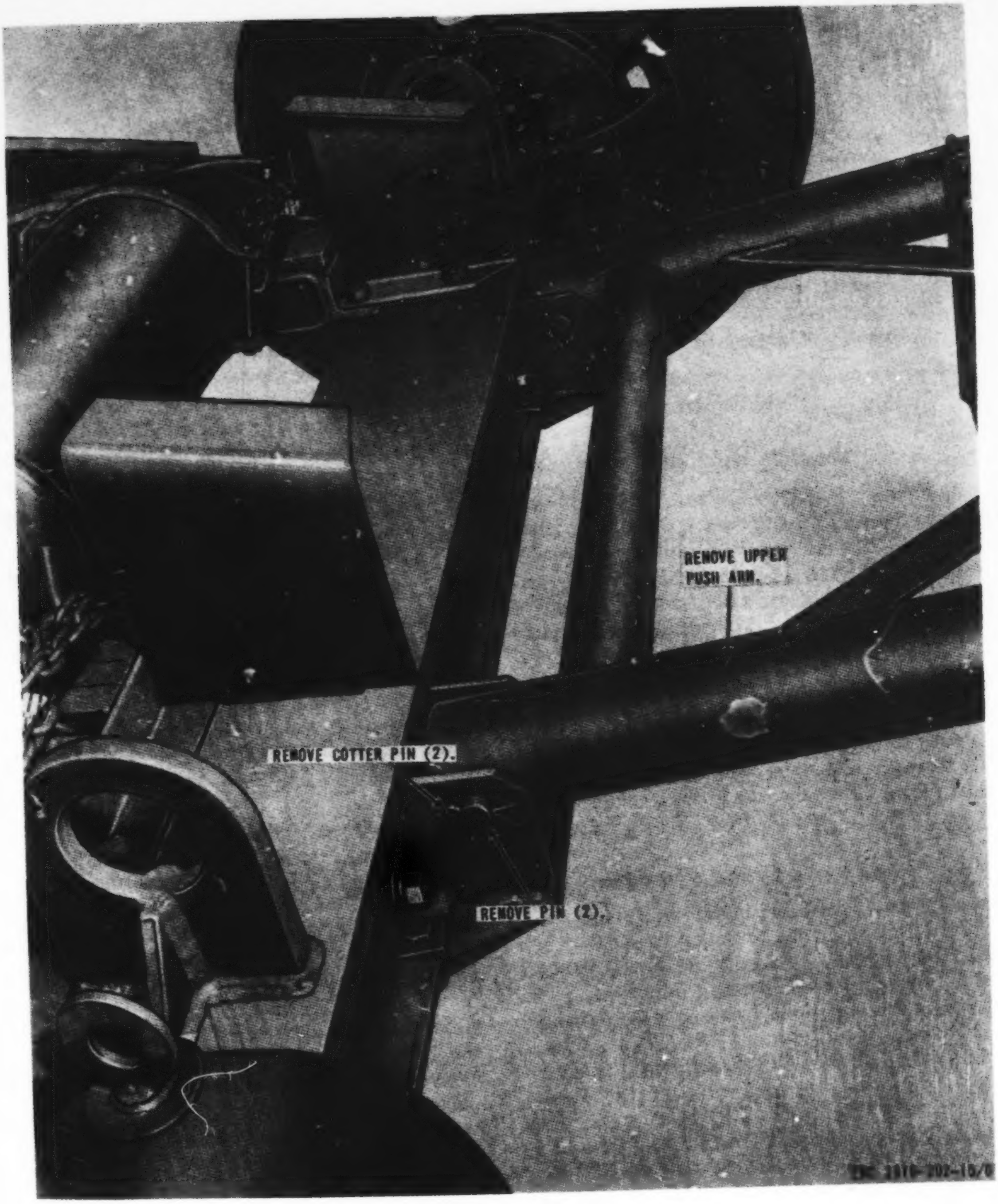

REMOVE UPPER PUSH ARM.
REMOVE COTTER PIN (2).
REMOVE PIN (2).
EMC 3910-202-15/0

*Figure 67. Upper push arm removal and installation.*

# CHAPTER 4

# DEMOLITION OF CONVEYOR TO PREVENT ENEMY USE

## 101. General

When capture or abandonment of the conveyor to an enemy imminent, the responsible unit commander must make the decision either to destroy the equipment or to render it inoperative. Based on this decision, orders are issued which cover the desired extent of destruction. Whatever method of demolition is employed, it is essential to destroy the same vital parts of all conveyors and all corresponding repair parts.

## 102. Demolition to Render the Conveyor Inoperative

*a. Demolition by Mechanical Means.* Use a sledge hammer, pick, axe, crowbar, or any heavy tool or object which may be available to destroy the following.

(1) Electric motor,control box, and wiring.
(2) Conveyor and drive belts.
(3) Roller assemblies and gear reducer.
(4) Air reservoir, valves, lines, and hose.
(5) Both wheels, including tires, hubs, and studs.

*Note.* The above steps are the minimum requirements for this method.

*b. Demolition by Misuse.*

(1) To render the conveyor inoperative, remove the oil fill plug and pour sand or other abrasive material into the gear reducer case and run till gears fail.
(2) If an abrasive material is not readily available or if time does not permit the use of abrasives, render the conveyor inoperative by draining the gear reducer case oil, overload the conveyor and hold in reset button, then run the conveyor until the motor gears fail.

*Note.* The above steps are the minimum requirements for this method.

## 103. Demolition by Explosives or Weapons Fire

*a. Explosives.* Place as many of the following charges (fig. 68) as the situation permits and detonate them simultaneously with a detonating cord and a suitable detonator.

*b. Weapons Fire.* Fire on the conveyor with the heaviest practical weapons available.

## 104. Other Demolition Methods

*a. Scattering and Concealment.* Remove all easily accessible parts such as the belts, roller assemblies, motor, and power cable. Scatter them through dense foliage, bury them in dirt or sand, or throw them in a lake, stream, or other body of water.

*b. Burning.* Pack rags, clothing, canvas, or brush inside and around the conveyor. Saturate with gasoline, oil, or diesel fuel and ignite.

*c. Submersion.* Totally submerge the conveyor in a body of water to provide concealment and water damage. Salt water will do the most damage.

## 105. Training

All operators should receive thorough training in the destruction of conveyor model PG70. Refer to TM 5–25. Simulated destruction, using all of the methods listed above, should be included in the operator training program. It must be emphasized in training that demolition operations are usually necessitated by critical situations when time available for carrying out destruction is limited. For this reason, it is necessary that operators be thoroughly familiar with all methods of destruction of equipment, and able to carry out demolition instructions without reference to this or any other manual.

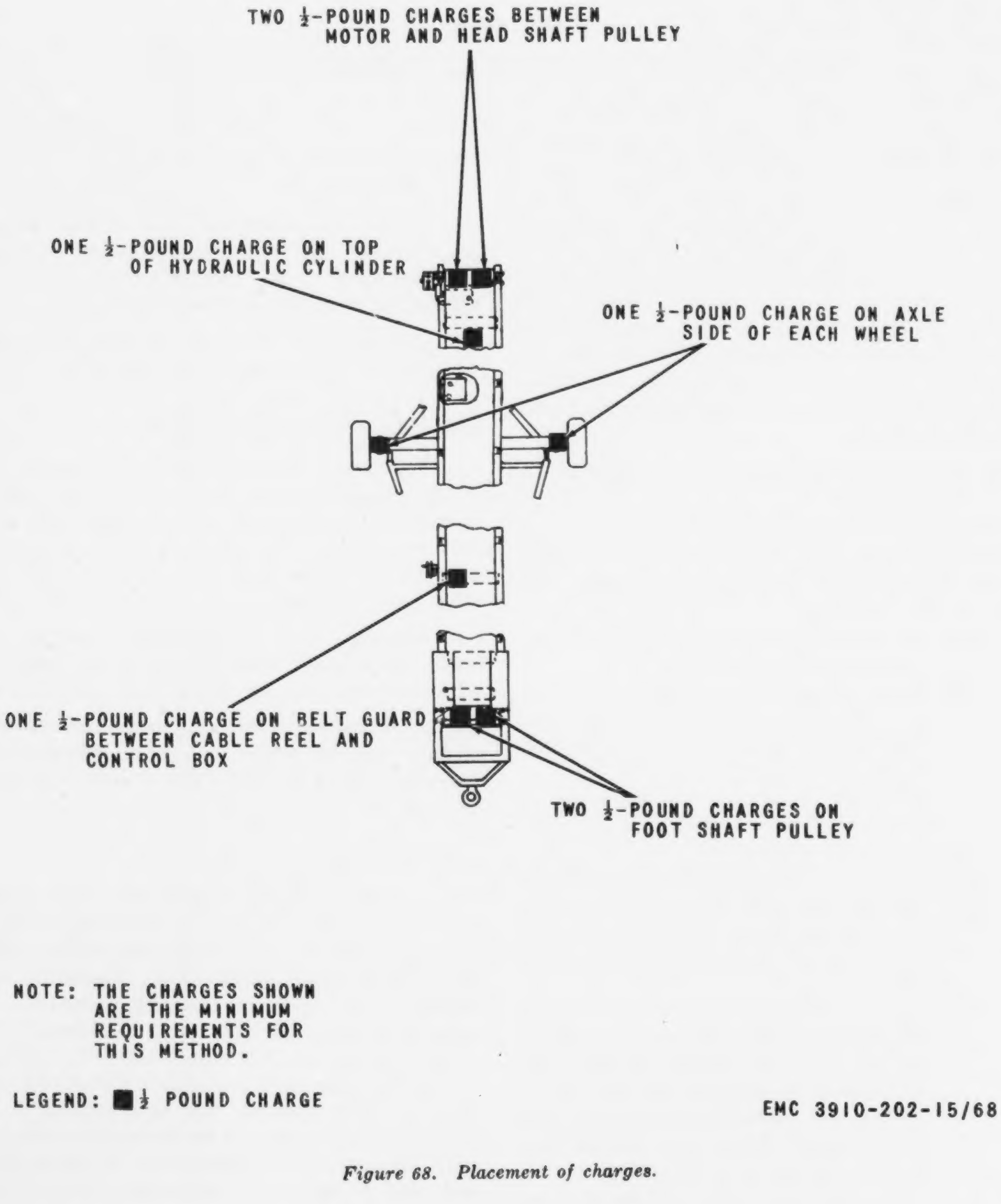

TWO ½-POUND CHARGES BETWEEN MOTOR AND HEAD SHAFT PULLEY
ONE ½-POUND CHARGE ON TOP OF HYDRAULIC CYLINDER
ONE ½-POUND CHARGE ON AXLE SIDE OF EACH WHEEL
ONE ½-POUND CHARGE ON BELT GUARD BETWEEN CABLE REEL AND CONTROL BOX
TWO ½-POUND CHARGES ON FOOT SHAFT PULLEY
NOTE: THE CHARGES SHOWN ARE THE MINIMUM REQUIREMENTS FOR THIS METHOD.
LEGEND: ■ ½ POUND CHARGE
EMC 3910-202-15/68

*Figure 68. Placement of charges.*

# CHAPTER 5
# SHIPMENT AND LIMITED STORAGE

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## Section I. SHIPMENT WITHIN ZONE OF INTERIOR

### 106. Preparation of Equipment for Shipment

*a. General.* This paragraph provides detailed instructions for preparing conveyor for domestic shipment.

*b. Inspection.* Perform a complete inspection of the conveyor in accordance with schedule for preventive maintenance services outlined in paragraph 41.

*c. Preservation.*

(1) *Cleaning and drying.* Clean all surfaces with an approved cleaning solvent and dry thoroughly. Refer to TM 38-230 for choice and application of cleaning method.

(2) *Painting.* Paint all parts on which the paint film has been damaged or removed. Refer to TB ENG 60 for detailed painting instructions.

(3) *Sealing openings.* Cover all openings that may permit direct entry of water to the electric motor with plastic plugs, caps, or pressure sensitive tape, conforming to Specification PPP-T-60, type III, class I.

(4) *Brake system.* Drain airbrake system by opening the draincock on the bottom of the reservoir.

(5) *Hydraulic system.* No preservative will be applied to the interior of the hydraulic system; however, the following steps and caution will be followed.

(*a*) Check the fluid level; add sufficient fluid of type specified by the the end item manufacturer to fill supply tank to operating level.

(*b*) Fully retract pistons as far as the linkage will permit and secure.

(*c*) Coat exposed portion of the hydraulic piston rod (ramshaft), operating valve control and all other exposed precision surfaces with preservative conforming to Specification MIL-C-11796 (type P-6), class 3 (if preservative is not available, coat with grease). Wrap or cover with greaseproof barrier mattterial conforming to MIL-B-121, type 1, grade C.

(*d*) Secure the hydraulic valve in the open position.

(6) *Exploded surfaces.* Coat exposed machined surfaces with preservative, conforming to Specification MIL-C-11796 (type P-6), class 3 (if Preservative is not available coat with grease).

(7) *Fire extinguisher.* Remove fire extinguisher from its bracket and pack in water resistant fiberboard container or railed wooden box; secure container to the unit in an upright position.

(8) *Power cable.* Coil the power cable on the reel if available. Secure the end of the cable to the reel.

(9) *Publications and tools.* Pack publications and basic issue items in toolbox, or a fabricated container, and secure with banding in a manner that will prevent loss and pilferage.

*d. Depreservation Guide.* DA Form 2258, "Depreservation guide of Engineer Equipment," will be completed simultaneously with preservation. Place guide in a waterproof envelope marked "Depreservation Guide," and secure to the electrical control box.

## 107. Loading Equipment for Shipment

*a.* Construct a ramp of suitable material as illustrated in figure 8 and back the conveyor on to the carrier. Block and secure the conveyor to the carrier as illustrated in figure 7. If the carrier is a railroad flatcar, cover red and amber lamps and reflectors with pressure sensitive tape, conforming to Specification PPP-T-90, type III class I.

*b.* If a loading ramp or material is not available and a suitable lifting device is used, the equipment will be loaded as follows:

(1) Attach cables to the four lifting lugs. Two lugs are located near the top front center of the belt conveyor and the other tow lugs are located on the axle frame. Install spreader bars between the cables.

*Note.* Spreader bars must always be used to keep cables from coming in contact with the belt conveyor.

(2) Lift the conveyor up and place it proportionally on the carrier.

(3) Remove lifting cables from the conveyor. Block and secure the conveyor to the carrier as illustrated in figure 7.

## Section II. LIMITED STORAGE

### 108. Preparation of Equipment for Storage

*a. General.* This paragraph outlines the minimum requirements for preparing the conveyor for limited storage. Limited storage is defined as being a period of time not to exceed 6 months (AR 743-505).

*b. Inspection.* Perform a complete inspection of the conveyor in accordance with schedule for preventive maintenance services outline in paragraph 41.

*c. Preservation.*

(1) *Cleaning and drying.* Clean all surfaces with an approved cleaning solvent and dry thoroughly. Refer to TM 38-230 for choice and application of cleaning methods.

(2) *Painting.* Paint all exposed metal surfaces when paint film is damaged or removed. Refer to TB ENG 60 for detailed painting instructions.

(3) *Sealing openings.* Refer to par. 106*c* (3).

(4) *Brake system.* Drain airbrake system by opening the draincock in the bottom of the air reservoir.

(5) *Hydraulic system.* Preserve in accordance with paragraph 106*c* (5).

(6) *Exposed surfaces.* Coat exposed machined ferrous metal surfaces with preservative, conforming to Specification MIL-C-11796 (type P-6), class 3. Coat unpainted, nonprecision exposed ferrous metal surfaces (such as operating parts of the lift) with preservative, conforming to Specification MIL-C-16173, (type P-1), grade 1.

(7) *Power cable.* Refer to paragraph 106*c* (8).

*d. Depreservation Guide.* Refer to paragraph 106*d*.

*e. Weatherproofing and Storage.* When suitable shelter is not available, select a firm, level, well drained storage location, protected from prevailing winds. Position the conveyor on heavy planks or other solid surfaces. Pneumatic tires standing in storage under load will be inflated to the proper pressure. When the equipment is blocked and all weight is removed from the tires, deflate tires to two-thirds normal tire pressure.

### 109. Inspection and Maintenance of Equipment in Storage

*a. Inspection.* All equipment in limited storage will be exercised and inspected every thirty days for any unusual conditions such as damage rusting, accumulation of water, pilferage, and leakage of lubricant DA Form 464 will be executed when the conveyor is initially placed in limited storage and every thirty days thereafter. Required maintenance will be performed to insure that equipment is mechanically sound and ready for immediate use.

*b. Exercising.* While in limited storage the conveyor will be operated long enough for complete lubrication of all bearings, gears, etc., at least once every thirty days. Equipment must be serviced and in satisfactory operating condition before it is exercised.

*c. Representation.* At completion of inspection and exercising the conveyor will be represerved to meet the requirement of paragraph 108*c*.

# CHAPTER 6
# FIELD AND DEPOT MAINTENANCE REPAIR INSTRUCTIONS

---

## Section I. GENERAL

### 110. Scope

*a.* The following instructions are provided for use of field and depot maintenance personnel. They contain information on the maintenance of the equipment, personnel, or supplies normally available to organizational maintenance facilities.

*b.* Appendix I contains a list of publications applicable to field and depot maintenance facilities for this equipment. Appendix II contains the maintenance allocation chart.

### 111. Field and Depot Maintenance Record and Report Forms

For record and report forms applicable to third, fourth, and fifth echelons of maintenance refer to TM 5-505, Maintenance of Engineer Equipment.

## Section II. DESCRIPTION AND DATA

### 112. Description

For a complete description of the belt conveyor, refer to paragraph 3.

### 113. Field and Depot Maintenance Tabulated Data

*a. Electric Motor Rebuild Data.*

| | |
|---|---|
| Manufacturer | General Electric |
| Model | 5KG4256B2Y23 |
| Horsepower | 10 |
| Revolutions per minute | 1,745 |
| Service factor | 1.00 |
| Volts | 280-220/440 |
| Phase | 3 |
| Cycles | 60 |
| Type | KG |
| Frame | 256U |
| Class | C |
| Code | G |
| Drive end | 40BC03 |
| Other end | 35BC02 |
| Duty classification | Continuous |
| Full load amperes at operating voltage | 13.1 |
| Temperature rise | 55°. |
| Bearings | Ball |
| Type of inclosure | Totally inclosed |
| Cooling | Fan colled |
| Number of poles | 4 |
| Number of slots | 48 |
| Number of coil groups | 12 |
| Number of coils per group | 4 |
| Number of turns per coil | 10 |
| Type of wire | HF |
| Wire size | 2(0480)HF |
| Coil span | 1-11 |
| Winding diagram | 227A335 |
| Lead length | 19 inches |
| Lead wire size | AWG12 |
| Resistance at 25° C. | 1.364 ohms |
| Insulation: | |
| Wedge or top stick | Fiber A1D3B1 0.021 in. (inch) (es) thick |
| Phase separaters | Rag paper A106B 0.015 in. thick |
| Slot tube | Mylar-rag paper composite Mylar A16B17 0.005 in. thick bonded to rag paper A1D6B 0.007 in. thick |

*b. Magnetic Starter Switch Rebuild Data.*

| | |
|---|---|
| Manufacturer | General Electric |
| Model | CR106-C400 CFA |
| Nema size | 1 |
| Voltage | 440 |
| Cycles | 60 |

| | |
|---|---|
| Coil number | 15D21G4 |
| Heater number | C13.7B |
| Heater amperes | 13.5 |

*c. Gear Reducer Assembly.*

| | |
|---|---|
| Manufacturer | Barber Green |
| Part number | A-53-1274 A |
| Ratio | 18.8 to 1 |

*d. Rear Reducer Assembly Repair and Rebuild Data.* Table II contains repair and rebuild data for the gear reducer assembly.

*e. Time Standards.* Table III lists the number of man-hours required under normal conditions for various operation in the maintenance and repair of the belt conveyor. The man-hours listed are not intended to be rigid standards. Under adverse conditions the operations will take considerably longer; whereas under ideal conditions with highly skilled mechanics, most of the operation can be accomplished in considerably less time.

*Table II. Gear Reducer Assembly Repair and Rebuild Data.*

| | Manufacturer's dimensions and tolerances in Inches | | Desired clearance | | Maximum allowable wear | Maximum allowable clearance |
|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | | |
| Input Shaft | | | | | | |
| Overall length | 10.460 | 10.470 | | | | |
| Drive end diameter | 1.935 | 1.937 | | | | |
| Seal shoulder diameter | 2.122 | 2.128 | | | | |
| Bearing journal diameter | 2.3623 | 2.3628 | | | | |
| Pinion length | 1.430 | 1.440 | | | | |
| Pinion diameter, outside | 2.5570 | 2.5575 | | | | |
| Bearing journal diameter | 1.9685 | 1.9691 | | | | |
| Anti-roll back shoulder diameter | 1.540 | 1.541 | | | | |
| Shaft end play | | | 0.001 | 0.003 | | 0.005 |
| Pinion backlash | | | 0.005 | 0.007 | | 0.010 |
| Intermediate Shaft | | | | | | |
| Overall length | 5.460 | 5.470 | | | | |
| Bearing journals diameter | 1.9686 | 1.9691 | | | | |
| Pinion length | 2.240 | 2.260 | | | | |
| Pinion diameter, outside | 2.3206 | 2.3211 | | | | |
| Shaft end play | | | 0.000 | 0.002 | | 0.004 |
| Pinion backlash | | | 0.010 | 0.018 | | 0.025 |
| Output Shaft | | | | | | |
| Overall length | 8.240 | 8.260 | | | | |
| End diameter | 3.495 | 3.505 | | | | |
| Bearing journals diameter | 3.5434 | 3.5440 | | | | |
| Center diameter | 3.5449 | 3.5455 | | | | |
| Inside diameter | 3.341 | 3.346 | | | | |
| Shaft end play | | | 0.000 | 0.002 | | 0.004 |
| Intermediate Gear | | | | | | |
| Outside diameter | 8.5340 | 8.5345 | | | | |
| Width | 1.000 | 1.010 | | | | |
| Bore | 1.970 | 1.971 | | | | |
| Blacklash | | | 0.005 | 0.007 | | 0.010 |
| Output Gear | | | | | | |
| Outside diameter | 11.3792 | 11.3797 | | | | |
| Width | 1.870 | 1.880 | | | | |
| Bore | 3.5455 | 3.5465 | | | | |
| Backlash | | | 0.010 | 0.018 | | 0.025 |

*Table III. Time Standard*

| | *Lubrication and service.* | *man-hours* |
|---|---|---|
| 12 | **Brakes** | |
| 1208.1 | Air Brake System | |
| | Air brake system | 0.1 |
| | (Drain condensation.) | |
| 1208.3 | Brake chambers, diaphragms, valves, Filters | |
| | Air cleaners | 0.1 |
| | (Remove strainer, clean, dry and replace.) | |
| 13 | Wheels and tracks | |
| 1311 | Wheel assembly | |
| | Bearings, wheel | 0.5 |
| | (Remove bearings, clean, pack, and replace.) | |
| 1313 | Tires, tubes | |
| | Tires | 0.1 |
| | (Replenish air.) | |
| 17 | Body: Cab; Hood: Hull | |
| 1708 | Stowage racks, boxes, straps | |
| | Reel, power cable | 0.1 |
| | (Lubricate fittings.) | |
| 40 | Electric Motor (Other Than Engine Accessories) | |
| 4000 | Motor assembly | |
| | Motor | 0.1 |
| | (Lubricate fittings.) | |
| 43 | Hydraulic Air and Vacuum Systems (Exclude Brake Systems) | |
| 4300 | Hydraulic System | |
| | System, hydraulic | 0.3 |
| | (Drain tank and refill to proper level.) | |
| 4301.1 | Strainer and filters | |
| | Strainer | 0.3 |
| | (Remove strainer, clean, and replace.) | |
| 4308 | Oil tank or reservoirs | |
| | Cap, fill and breather | 0.1 |
| | (Removal cap, clean, dry, and replace.) | |
| 75 | Conveying; Feeding; Crushing; Screening; and Washing Equipment | |
| 7500.2 | Drive shafts | |
| | Gear reducer assembly | 0.5 |
| | (Drain and refill to proper level.) | |
| 7501.3 | Drums, pulleys, sprockets | |
| | Bearings | 0.1 |
| | (Lubricate fittings.) | |
| 76 | Fire Fighting Equipment | |
| 7603 | Fire extinguishers | |
| | Extinguisher, fire | 0.1 |
| | (Clean.) | |
| | *Remove and replace* | *man-hours* |
| 06 | Electrical System (Engine and Vehicular) | |
| 0609.1 | Head, tain. and marker lights | |
| | Light, tail and marker | 0.1 |
| | Lamps, lens, gasket | 0.1 |
| 0613 | Hull or chassis wiring harness | |
| | Harness, wiring | 8.0 |
| 0617 | Trailer couplings | |
| | Cable, connector | 0.1 |
| 11 | Rear Axle | |
| 1100 | Rear axle assembly | |
| | Axle assembly, rear | 3.0 |
| 1101 | Housing, beam, housing covers, plugs | |
| | Frame, axle | 7.6 |
| | (Includes removal and installation of steering knuckles, and hoist frame.) | |
| 1104 | Steering | |
| | Spindles | 3.1 |
| | (Includes removal and installation of wheel and brake.) | |
| | Pins, lock | 0.1 |
| 12 | Brakes (Other Than Special Purpose) | |
| 1202 | Service Brakes | |
| | Brake assembly | 2.1 |
| | (Includes removal and installation of wheel.) | |
| 1208.1 | Air brake system | |
| | Line, air | 0.5 |
| | Fitting | 0.1 |
| 1208.3 | Brake chambers, diaphrams, valves, filters | |
| | Chamber, brake | 2.8 |
| | (Includes removal and installation of wheel and brake assembly.) | |
| | Valve, relay | 0.5 |
| | Air, cleaners | 0.2 |
| 1209.3 | Air reservoir, fittings | |
| | Reservoir, air | 0.5 |
| | Fitting | 0.1 |
| 1211 | Trailer brake connections and controls | |
| | Hose; fittings | 0.3 |
| | Coupling | 0.1 |
| | Grommet, rubber | 0.1 |
| 13 | Wheels and Tracks | |
| 1311 | Wheel assembly | |
| | Hub, wheel | 1.5 |
| | Drum, brake | 1.5 |
| | Bearings | 0.5 |
| | Seal | 0.5 |
| | Rim | 1.0 |
| | (Includes removal and installation of tire and tube.) | |
| 1313 | Tires, tubes | |

*Table III. Time Standard—Continued*

| | Remove and replace | man-hours |
|---|---|---|
| | Tire | 1.0 |
| | Tube | 1.0 |
| 15 | Frame | |
| 1503 | Pintles and towing attachments | |
| | Hitch | 0.8 |
| | Lunette | 0.2 |
| | Chains | 0.1 |
| 17 | Body; Cab; Hood; Hull | |
| 1704 | Panels | |
| | Panel, data plate | 0.5 |
| | Panel, switchbox | 1.3 |
| | (Includes removal and installation of switchbox and receptacle.) | |
| 1708 | Stowage racks, boxes, straps | |
| | Reel, power cable | 0.5 |
| 22 | Miscellaneous Body, Chassis or Hull, and Acvcessory Items | |
| 2202.1 | Mirrors, refelctors, personnel heaters, defrosters, wipers, air horns | |
| | Reflectors | 0.1 |
| 2210 | Data plates and instruction holders | |
| | Plates, data | 0.2 |
| | Plate, instruction and caution; holders, instruction | 0.1 |
| 26 | Accessories, Publications, Test Equipment and Tools | |
| 2602.1 | Accessories | |
| | Block, chock | 0.1 |
| 40 | Electric Motors | |
| 4000 | Motor assembly | |
| | Motor | 1.0 |
| 4001 | Rotor assemblies | |
| | Rotor | 2.0 |
| | (Motor out of unit.) | |
| 4002 | Startor assemblies | |
| | Stator assembly | 5.0 |
| | (Motor out of unit.) | |
| 4404 | Ventilating system | |
| | Fan | 0.5 |
| | Guard | 0.2 |
| 4005 | Frame supports and housings | |
| | End assemblies; frame, center | 5.0 |
| | (Motor out of unit.) | |
| | Box, junction | 0.2 |
| 4007 | Drive components | |
| | Belt | 0.2 |
| | Pulley | 0.3 |
| 4010 | Controls, starting; main or auxiliary | |
| | Starter, magnetic | 1.0 |
| | Buttons; push | 0.2 |
| | Heaters | 0.1 |
| 4014 | Terminal boxes, panel or junction blocks, wiring, etc. | |
| | Conduit, flexible | 6.0 |
| | Connector | 1.0 |
| | Wiring | 6.0 |
| | Cable, Power | 0.1 |
| | Receptacle, power | 0.2 |
| 43 | Hydraulic, Air and Vacuum Systems | |
| 4301 | Hose, pipe, fittings | |
| | Hose and fittings | 0.2 |
| 4301.1 | Strainers and filters | |
| | Strainer | 0.3 |
| 4302 | Pump and mounting parts | |
| | Pump, hand | 0.5 |
| 4304.1 | Check valves | |
| | Valve, flow control | 0.3 |
| 4307 | Hydraulic cylinders | |
| | Cylinder, hydraulic | 1.2 |
| 4308 | Oil tank or reservoirs | |
| | Tank, hyraulic oil | 0.8 |
| | Cap, fill breather | 0.1 |
| 75 | Conveying; Feeding; Screening; and Washing Equipment | |
| 75002.2 | Drive shafts | |
| | Gear reducer assembly | 1.0 |
| 7500.3 | Idlers, tighteners | |
| | Arm assembly, torque | 0.2 |
| 75.00.5 | Guard and attaching parts | |
| | Guard, conveyor belt | 6.0 |
| | Guard | 0.2 |
| 7501.1 | Belting, chain | |
| | Belt, conveyor | 2.2 |
| | Scrapers | 0.8 |
| 7501.2 | Conveyor frames | |
| | Frame, head shaft | 6.7 |
| | (Includes removal and installation of gearbox, motor, head shaft, disconnecting conveyor belt.) | |
| | Frame, foot shaft | 6.8 |
| | (Includes removal and installation of tongue, air lines, wiring, foot shaft, and disconnecting conveyor belt.) | |
| | Frame, conveyor | 9.3 |
| | (Includes removal and installation of arms, wiring, rollers, conveyor belt, etc.) | |
| | Hopper | 3.5 |
| | Arms | 3.8 |
| | (Includes removal and installation of hydraulic | |

*Table III. Time Standard Continued*

| | *Remove and replace* | *man-hours* |
|---|---|---|
| | cylinder and hydraulic tank.) | |
| | Frame, axle | 1.8 |
| 7501.3 | Drums, pulleys, sprockets | |
| | Shaft assembly, head (Includes removal and installation of gearbox and disconnecting conveyor belt.) | 3.2 |
| | Shaft assembly, foot (Includes disconnecting conveyor belt.) | 2.3 |
| | Bearing, head shaft (Includes removal and installation of gearbox.) | 2.0 |
| | Bearings, foot shaft | 1.6 |
| | Lagging (Includes disconnecting conveyor belt.) | 2.5 |
| 7501.4 | Rolls | |
| | Roller assemblies | 0.4 |
| 76 | Fire Fighting equipment | |
| 7603 | Fire extinguishers | |
| | Extinguisher, fire | 0.1 |

## Section III. SPECIAL TOOLS AND EQUIPMENT

### 114. Special Tools and Equipment

No special tools or equipment are needed for maintenance of the Belt Conveyor Model PG 70 by the field and depot personnel.

### 115. Field and Depot Maintenence Repair Parts

Field and depot maintenance repair parts are listed and illustrated in TM 5–3910–202–25P.

## Section IV. TROUBLESHOOTING

### 116. General

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the conveyor or any of its components. Each trouble symptom stated is followed by a list of probable causes of trouble. The possible remedy recommended is described opposite the probable cause.

### 117. Motor Fails to Run

| *Probable cause* | *Possible remedy* |
|---|---|
| Defective field coil | Replace field coil (pars. 136–138). |
| Defective bearings | Replace bearing (pars. 136–138). |
| Defective rotor | Replace rotor (pars. 136–138). |
| Defective wiring harness | Replace wiring harness (pars. 154–156). |

### 118. Motor Overheats

| *Probable cause* | *Possible remedy* |
|---|---|
| Defective fan | Replace fan (pars. 136–138). |
| Defective bearings | Replace bearings (pars. 136–138). |

### 119. Magnetic Starter Fails to Operate

| *Probable cause* | *Possible remedy* |
|---|---|
| Open or shorted coil | Replace coil (pars. 139–141). |
| Burned or frozen contacts | Replace contacts (pars. 139–141). |
| Damaged wire leads | Replace leads (pars. 139–141). |
| Defective plunger | Replace plunger (pars. 139–141). |

### 120. Head or Foot Shaft Pulley Fails to Rotate

| *Probable cause* | *Possible remedy* |
|---|---|
| Defective bearings | Replace bearing (pars. 125–130). |
| Bent shaft | Replace shaft (pars. 125–130). |
| Defective pulleys | Replace pulleys (pars. 125–130.) |

### 121. Hydraulic Cylinder Will Not Move

| *Probable cause* | *Possible remedy* |
|---|---|
| Bent piston | Replace piston (pars. 143–145). |
| Cracked housing | Replace housing (pars. 143–145). |
| Defective seals | Replace seals (pars. 143–145). |

## 122. Gear Reducer Assembly Will Not Operate

| *Probable cause* | *Possible remedy* |
|---|---|
| Bearing worn or broken | Replace bearing (pars. 132–134). |
| Gears worn or teeth broken | Replace gears (pars. 132–134). |
| Cracked gearcase | Replace case (pars. 132–134). |
| Warped or out-of-round shaft | Replace shafts (pars. 132–134). |

## 123. Brakes Fail to Operate N

| *Probable cause* | *Possible remedy* |
|---|---|
| Defective chambers | Replace chamber (pars. 147–149). |
| Defective relay valve | Repair relay valve (pars. 150–152). |
| Defective cylinders | Replace cylinder (pars. 147–149). |

# Section V. HEAD AND FOOT SHAFT, BEARINGS, AND PULLEY ASSEMBLIES

## 124. General

The foot shaft pulley serves as a guide for the conveyor belt at the hopper end. The shaft is mounted on the conveyor frame by bearing housings that are mounted in tracks which enable the foot shaft pulley to be moved inward to put slack in the conveyor belt or outward to remove slack from the belt. The head shaft pulley is mounted on the driving or discharge end of the conveyor and drives the conveyor belt.

## 125. Head Shaft, Bearings, and Pulley Removal

*a.* Disconnect the conveyor belt (par. 50).

*b.* Remove the gear reducer assembly (par. 56).

*c.* Remove the head shaft, bearings, and pulley as instructed in figure 69.

## 126. Head Shaft, Bearings, and Pulley Cleaning and Inspection

*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect for cracks, breaks, and worn or damaged parts. Replace worn, scored pitted, or overheated bearings. Replace all damaged or defective parts.

## 127. Head Shaft, Bearings, and Pulley Installation

*a.* Install the head shaft, bearing, and pulley as illustrated in figure 69. Lubricate as instructed in LO 5–3910–202–15.

*b.* Install the gear reducer assembly (par. 56).

*c.* Connect the conveyor belt (par. 50).

*d.* Adjust the head shaft pulley to a point where the conveyor belt has an even contract across it and the conveyor belt runs in correct alinement with conveyor frame.

## 128. Foot Shaft, Bearings, and Pulley Removal

*a.* Disconnect the conveyor belt (par. 50).

*b.* Remove the hopper (par. 69).

*c.* Remove the foot shaft, bearings, and pulley as instructed in figure 70.

## 129. Foot Shaft, Bearings, and Pulley Cleaning and Inspection

*a. Cleaning.* Clean all parts with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect for cracks, breaks, worn or damaged parts. Replace all damaged or defective parts.

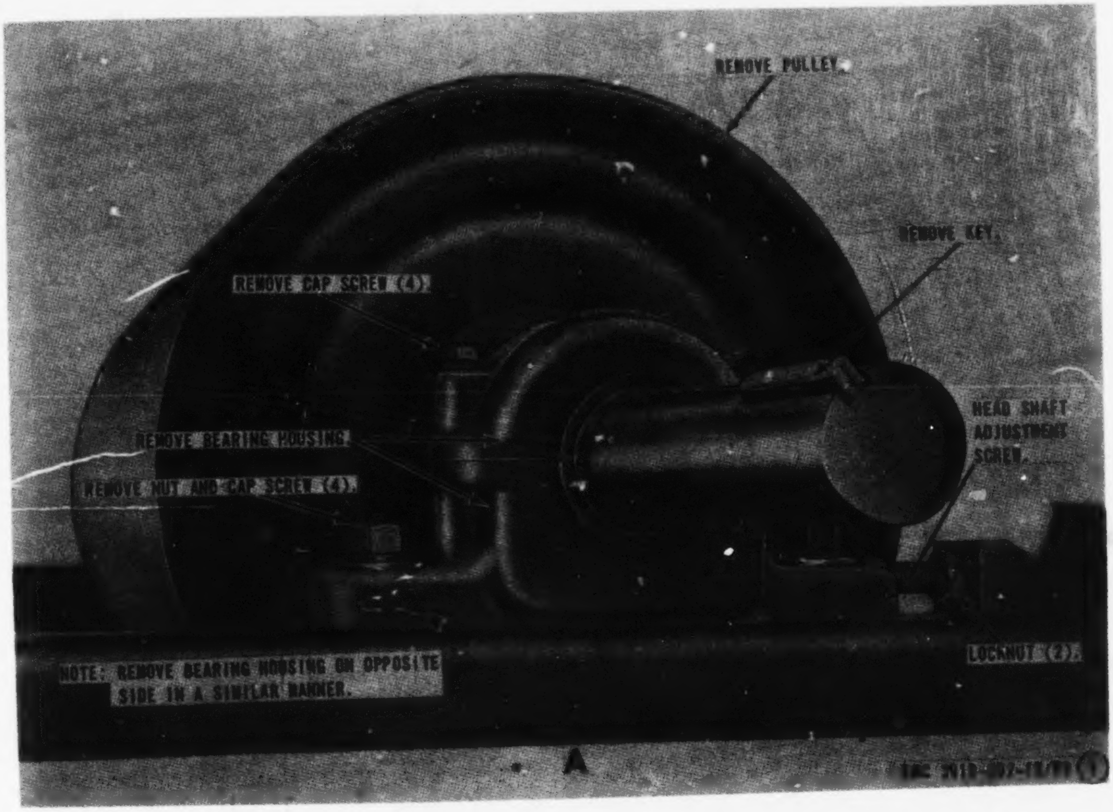
## 130. Foot Shaft, Bearings, and Pulley Installation

*a.* Install the foot shaft, bearings, and pulley as illustrated in figure 70.

*b.* Install the hopper (par. 69).

*c.* Connect the conveyor belt (par. 50).

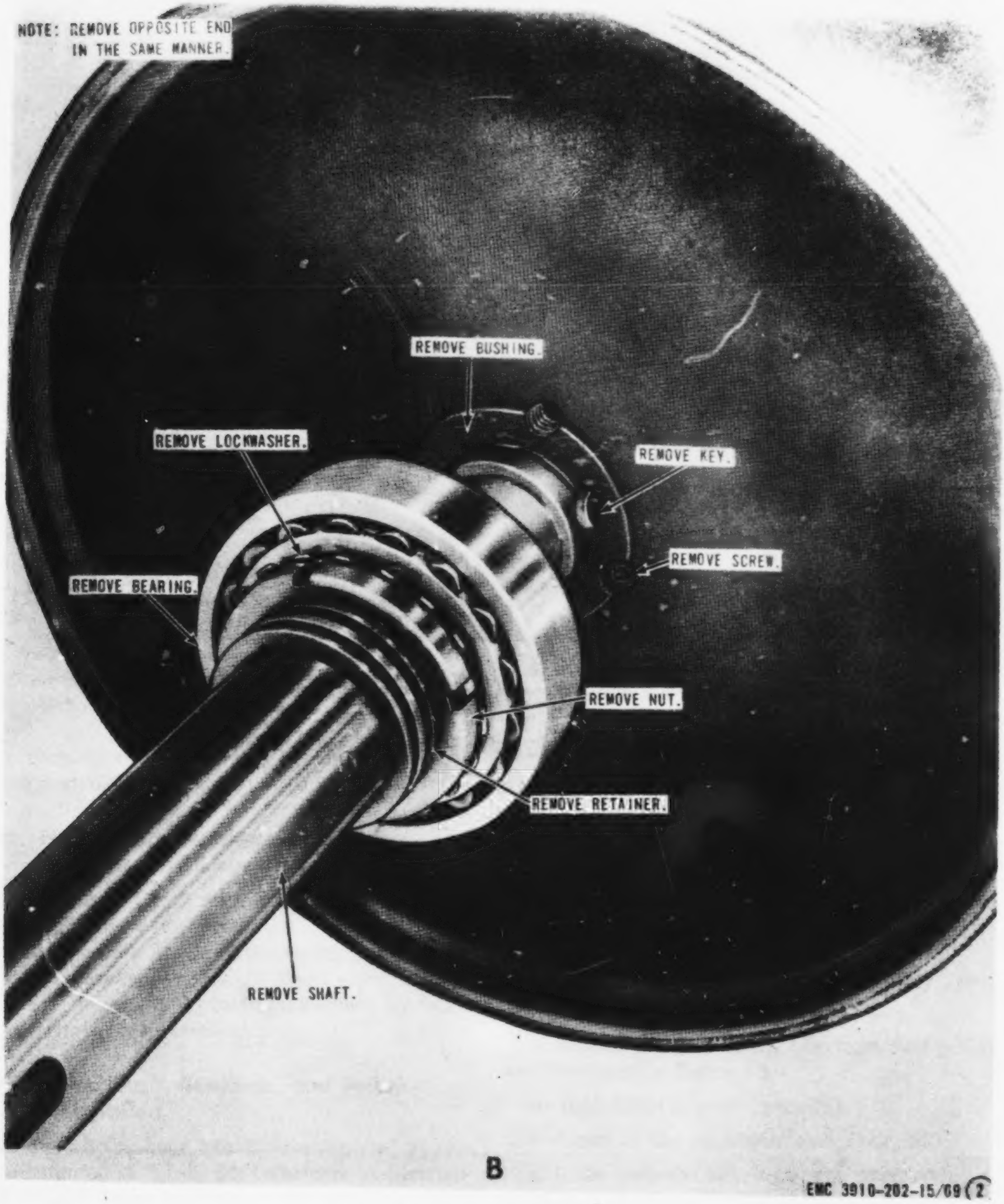
*d.* Lubricate the bearings as instructed in LO 5–3810–202–15.


REMOVE PULLEY.
REMOVE KEY.
REMOVE CAP SCREW (4).
HEAD SHAFT ADJUSTMENT SCREW.
REMOVE BEARING HOUSING.
REMOVE NUT AND CAP SCREW (4).
LOCKNUT (2).
A

NOTE: REMOVE BEARING HOUSING ON OPPOSITE SIDE IN A SIMILAR MANNER.

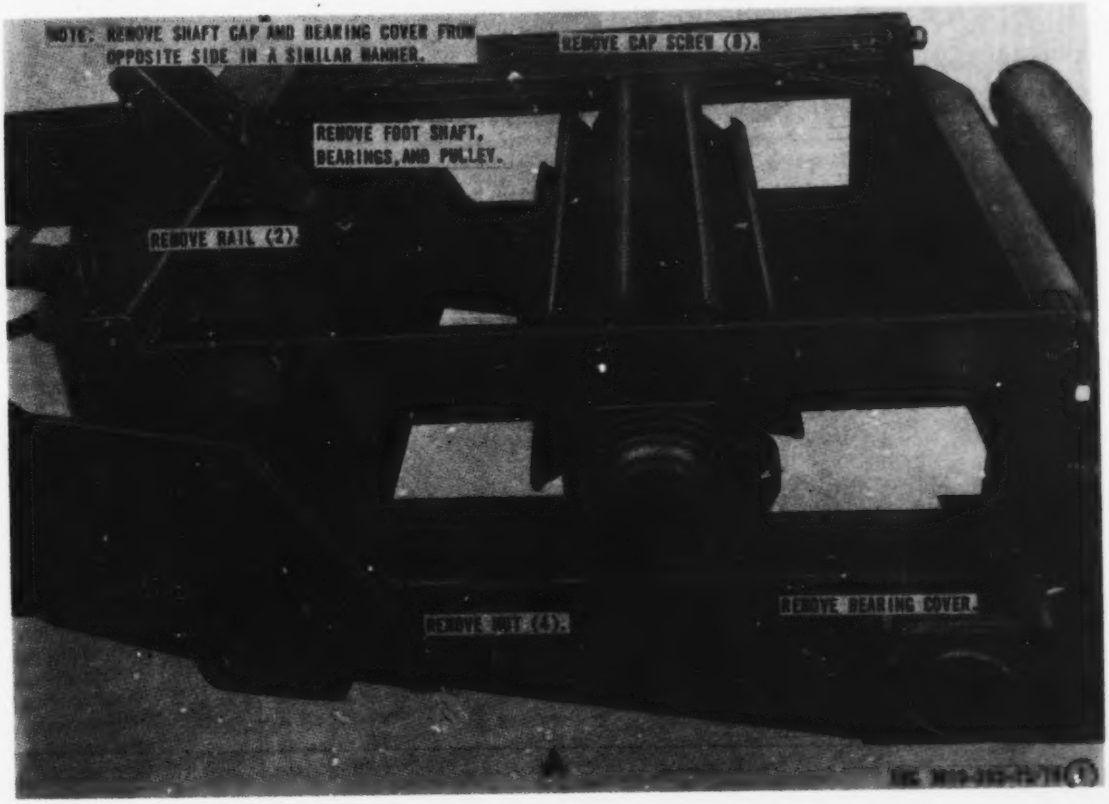
A—Pulley and bearing housing removal

*Figure 69. Head shaft, bearings, and pulley removal and installation.*


NOTE: REMOVE OPPOSITE END IN THE SAME MANNER.
REMOVE BUSHING.
REMOVE LOCKWASHER.
REMOVE KEY.
REMOVE SCREW.
REMOVE BEARING.
REMOVE NUT.
REMOVE RETAINER.
REMOVE SHAFT.
B
EMC 3910-202-15/69 (2)

B—shaft and bearing removal.

*Figure 69—Continued.*



NOTE: REMOVE SHAFT CAP AND BEARING COVER FROM OPPOSITE SIDE IN A SIMILAR MANNER.

REMOVE CAP SCREW (8).

REMOVE FOOT SHAFT, BEARINGS, AND PULLEY.

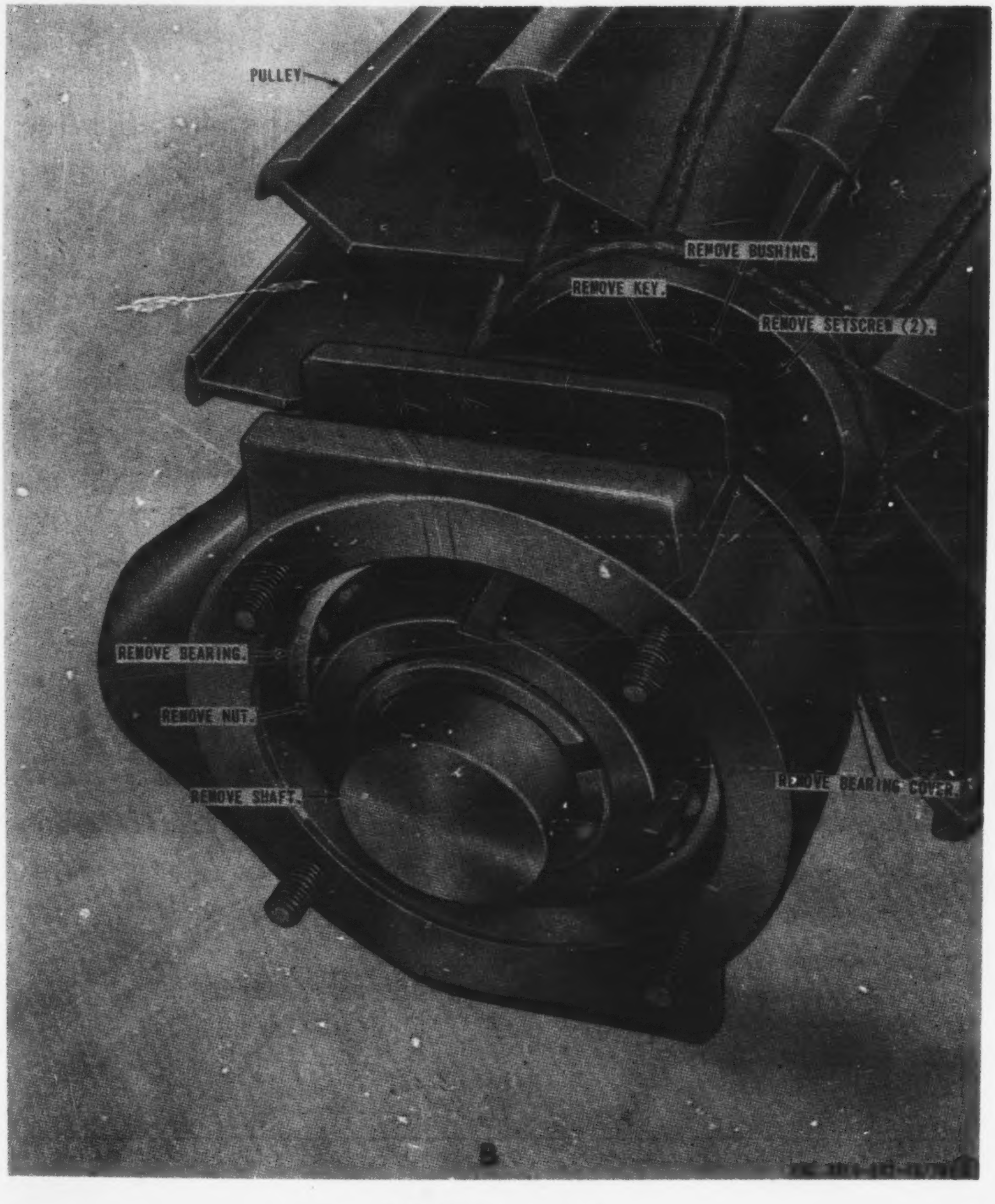
REMOVE RAIL (2).

REMOVE BEARING COVER.

REMOVE NUT (4).

A—Pulley and bearing cover removal

*Figure 70. Foot shaft, bearings, and pulley removal and installation.*


PULLEY
REMOVE BUSHING.
REMOVE KEY.
REMOVE SETSCREW (2).
REMOVE BEARING.
REMOVE NUT.
REMOVE SHAFT.
REMOVE BEARING COVER.
B

**B—Bearing and shaft removal**

*Figure 70—Continued.*

## Section VI. GEAR REDUCER ASSEMBLY

### 131. General

The gear reducer is a means of power transfer through a series of gears, from the motor to the head shaft. This is done by reducing the rpm and increasing the torque delivered to the head shaft. The gear reducer also stops backward movement of belt when conveyor is stopped while loaded.

### 132. Gear Reducer Assembly Removal and Disassembly

*a. Removal.* Remove the gear reducer assembly (par. 56).

*b. Disassembly.* Disassemble the gear reducer in numerical sequence as instructed in figure 71.

*Note.* During disassembly removal bearing B7 after removing C, and remove bearing D8, spacer D9 after removing E; also bearing G7 must be removed after removing H.

### 133. Gear Reducer Assembly Cleaning, Inspection, and Repair

*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

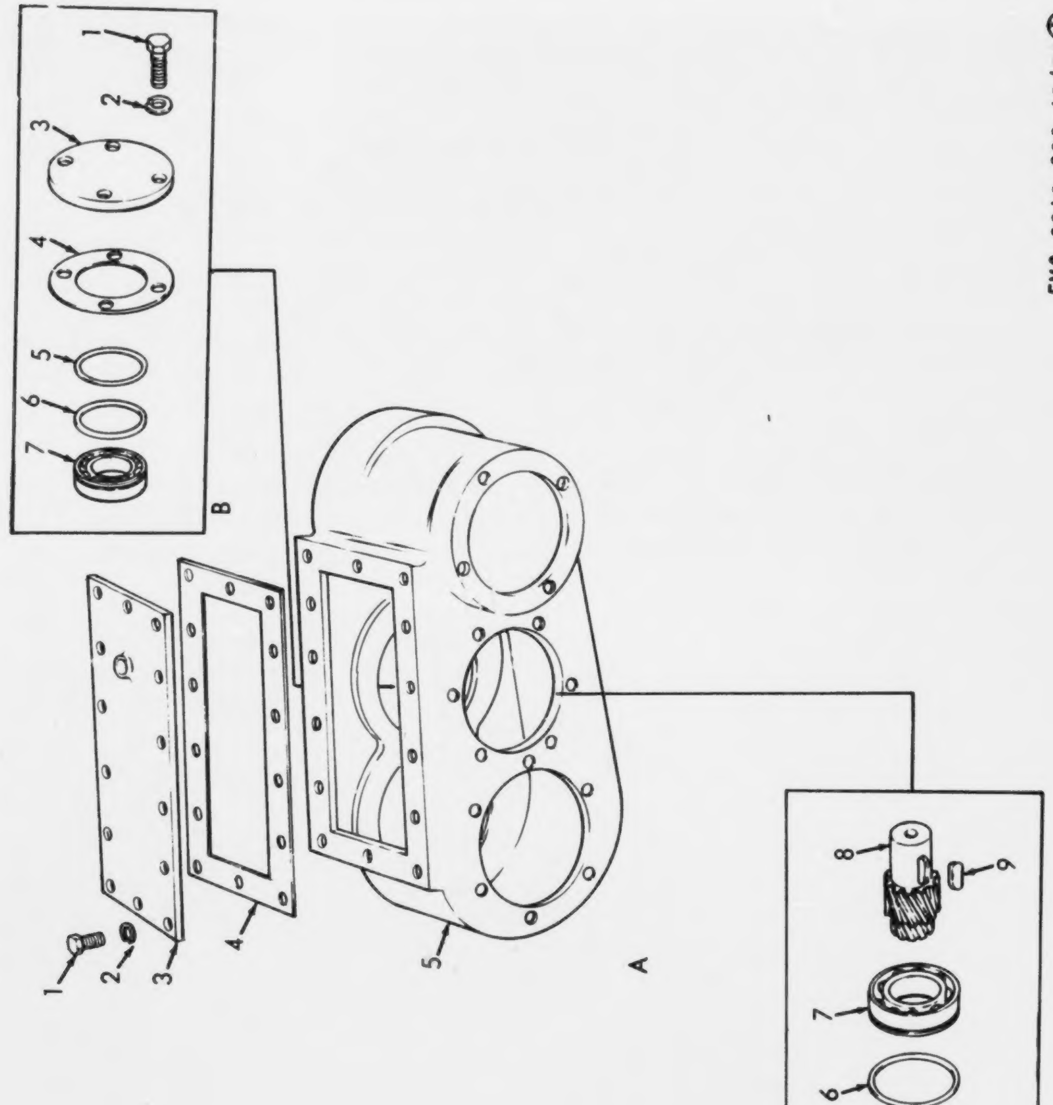
*b. Inspection and Repair.* Inspect all parts and replace or repair all defective or damaged parts.

### 134. Gear Reducer Assembly Reassembly and Installation

*a. Reassembly.* Reassemble the gear reducer assembly in the reverse order of the numerical sequence illustrated in figure 71.

*Note.* When reassembling be sure to aline gear F2 on shaft E8 and gear F1 on shaft C8.

*b. Installation.* Install the gear reducer assembly (par. 56). Lubricate as instructed in LO 5-3910-202-15.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EMC 3910-202-15/71①

*Figure 71. Gear reducer assembly, exploded view.*

1 Screw, cap, 3/8-16 X 11/16 in. (14 rqr)
2 Washer, lock, 3/8 in. (14 rqr
3 Housing cover
4 Cover gasket
5 Gear housing

A—Housing and cover.

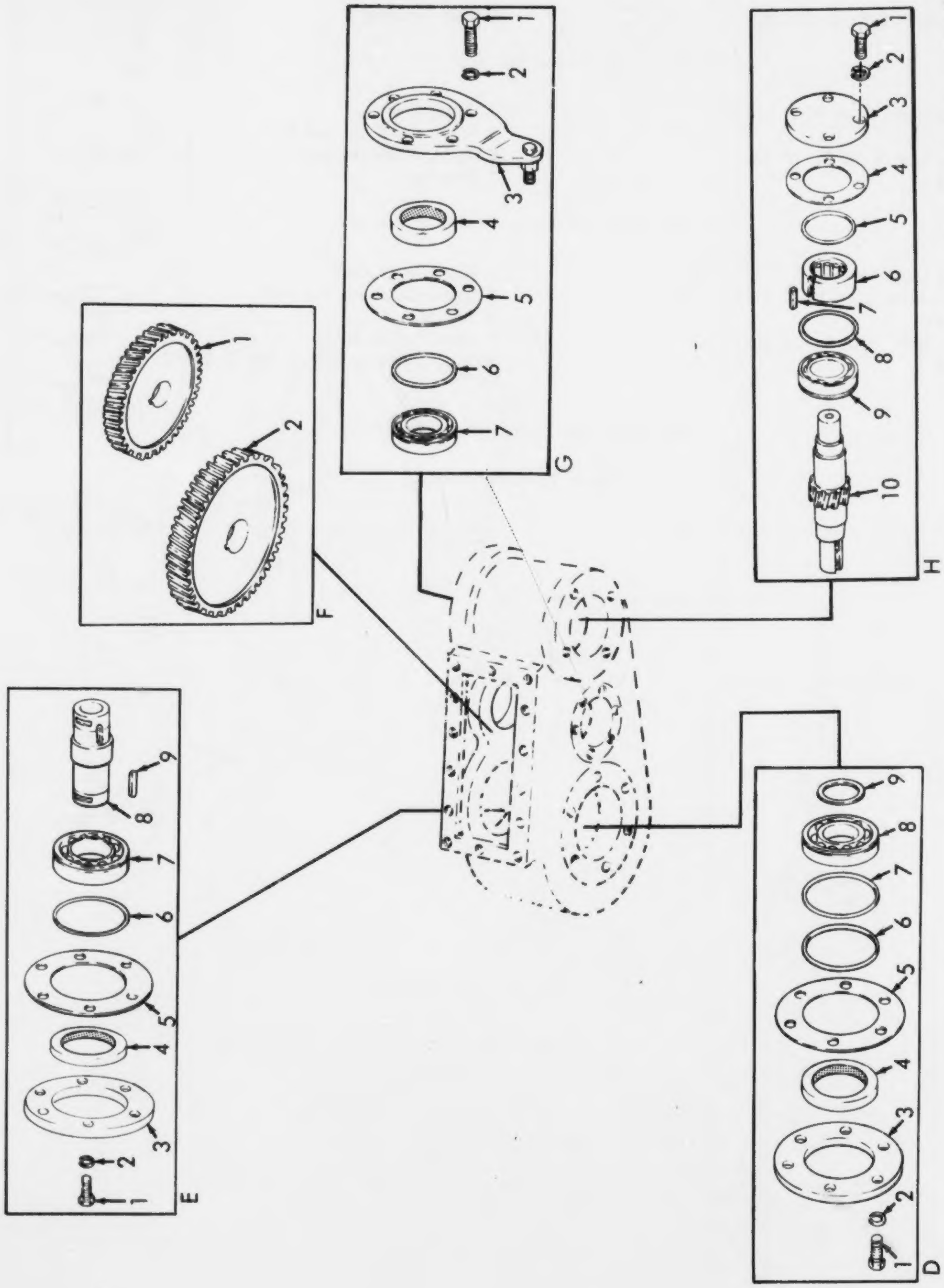
1 Bolt, machine, 5/16-18 X 1 in. (4 rqr)
2 Washer, lock, 5/16 in. (4 rqr)
3 End cap
4 Cap gasket
5 Shim, 0.020 in. (as rqr)
6 Shim, 0.010 in. (as rqr)
7 Bearing

B—Idler pinion shaft bearing and end cap, right side.

1 Oil level gage
2 Bolt, machine, 5/16-18 X 1 in. (6 rqr)
3 Washer, lock, 5/16 in. (6 rqr)
4 End cap
4 End cap
5 Retainer gasket
6 Shim, 0.005 in. (as rqr)
7 Bearing
8 Idler pinion shaft
9 Key, machine, 3/8 X 3/8 X 1-3/8 in.

C—Idler pinion shaft, bearing and end cap, left side.

*Figure 71—Continued.*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EMC 3910-202-15/71②

Figure 71—Continued.

1 Bolt, machine, 5/16-18 X 1 in. (6 rqr)
2 Washer, lock, 5/16 in. (6 rqr)
3 Seal retainer
4 Oil seal
5 Retainer gasket
6 Shim, 0.010 in. (as rqr)
7 Shim, 0.020 in. (as rqr)
8 Bearing
9 Bearing spacer

D—Hub shaft, bearing and retainer, left side

1 Bolt, machine, 5/16-18 X 1 in. (6 rqr)
2 Washer, lock, 5/16 in. (6 rqr)
3 Seal retainer
4 Oil seal
5 Retainer gasket
6 Shim, 0.005 in. (as rqr)
7 Bearing
8 Hub shaft
9 Key, machine, 3/8 X 3/8 X 1-3/8 in.

E—Hub shaft, bearing and retainer, right side

1 Small gear
2 Large gear

F—Hellical gears

1 Bolt, machine, 5/16-18 X 1 in. (6 rqr)
2 Washer, lock, 5/16 in. (6 rqr)
3 Seal retainer
4 Oil seal
5 Retainer gasket
6 Shim, 0.005 in. (as rqr)
7 Bearing

G—Drive pinion shaft bearing and retainer, right side

1 Bolt, machine, 5/16-18 X 3/4 in. (4 rqr)
2 Washer, lock, 5/16 in. (4 rqr)
3 End cap
4 Cap gasket
5 Shim, 0.010 in. (as rqr)
6 Over-running clutch
7 Key, machine, 3/8 X 3/8 X 1-1/2
8 Shim, 0.020 in. (as rqr)
in.
9 Bearing
10 Drive pinion shaft

H—Drive pinion shaft, bearing and end cap, left side

*Figure 71—Continued.*

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## Section VII. ELECTRIC MOTOR AND MAGNETIC STARTER ASSEMBLIES

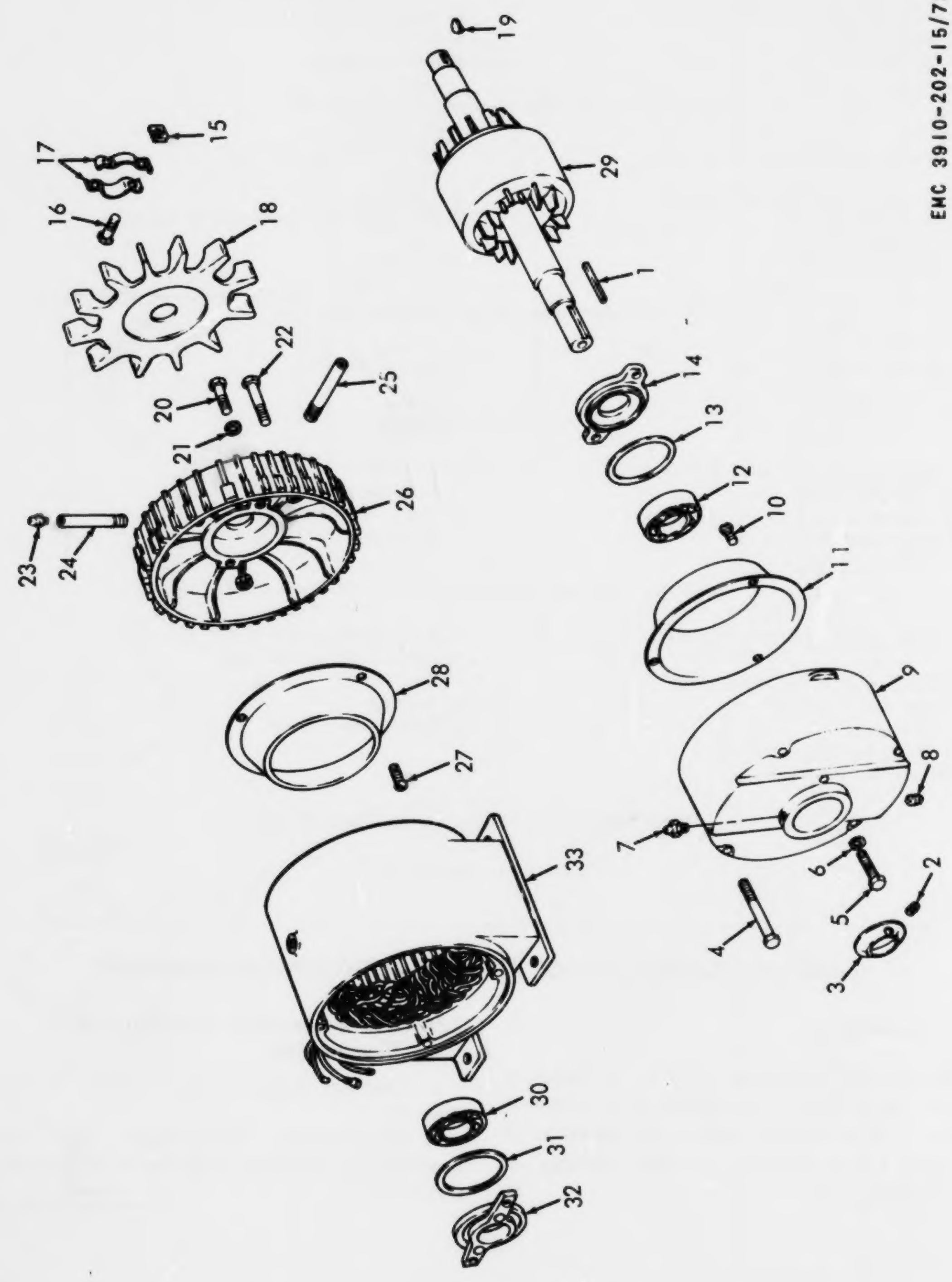
### 135. General

The conveyor is driven by a 10 horsepower electric motor, that is energized by a magnetic starter. This motor and starter are operated on 440 volts. (This magnetic starter operates on 440 volts only)

### 136. Motor Assembly Removal and Disassembly

*a. Removal.* Remove the motor assembly (par. 81).

*b. Disassembly.* Disassembly the motor assembly in numerical sequence as instructed in figure 72.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EMC 3910-202-15/72

*Figure 72. Motor assembly, exploded view.*

1 Key 5/16 X 5/16 X 2-3/4 in.
2 Setscrew, 1/8-32 X 1/4 in.
3 Oil slinger
4 Screw, cap, 3/8-16 X 4-1/4 in. (4 rqr)
5 Screw, cap, 5/16-18 X 2 in. (2 rqr)
6 Washer, special (2 rqr)
7 Lubrication fitting
8 Pipe plug
9 Drive end bearing support
10 Screw, no. 12-28 X 3/8 in. (3 rqr)
11 Dust shield
12 Bearing
13 Gasket
14 Retainer
15 Nut, 5/16-18 (2 rqr)
16 Screw, cap, 5/16-18 X 2 in. (2 rqr)
17 Clamp (2 rqr)
18 Fan
19 Key, woodruff, no. 9
20 Screw, cap, 5/16-18 X 2 in. (2 rqr)
21 Washer, special (2 rqr)
22 Screw, cap, 3/8-16 X 3-1/2 in. (4 rqr)
23 Lubrication fitting
24 Lubrication nipple
25 Drain
26 Fan end bearing support
27 Screw, no. 12-28 X 3/8 in. (3 rqr)
28 Dust shield
29 Rotor
30 Bearing
31 Gasket
32 Retainer
33 Frame and field assembly

*Figure 72—Continued.*

## 137. Motor Assembly Cleaning, Inspection, and Repair

*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection and Repair.* Inspect all parts for wear or damage. Refer to TM 5-764 for repair of motor assembly.

## 138. Motor Assembly Reassembly and Installation

*a. Reassembly.* Reassemble the motor assembly in the reverse order of the numerical sequence illustrated in figure 72.

*b. Installation.* Install the motor assembly (par. 81).

## 139. Magnetic Starter Removal and Disassembly

*a. Removal.* Remove the magnetic starter (par. 80).

*b. Disassembly.* Disassemble the magnetic starter in numerical sequence as instructed in figure 73.

## 140. Magnetic Starter Cleaning, Inspection, and Repair

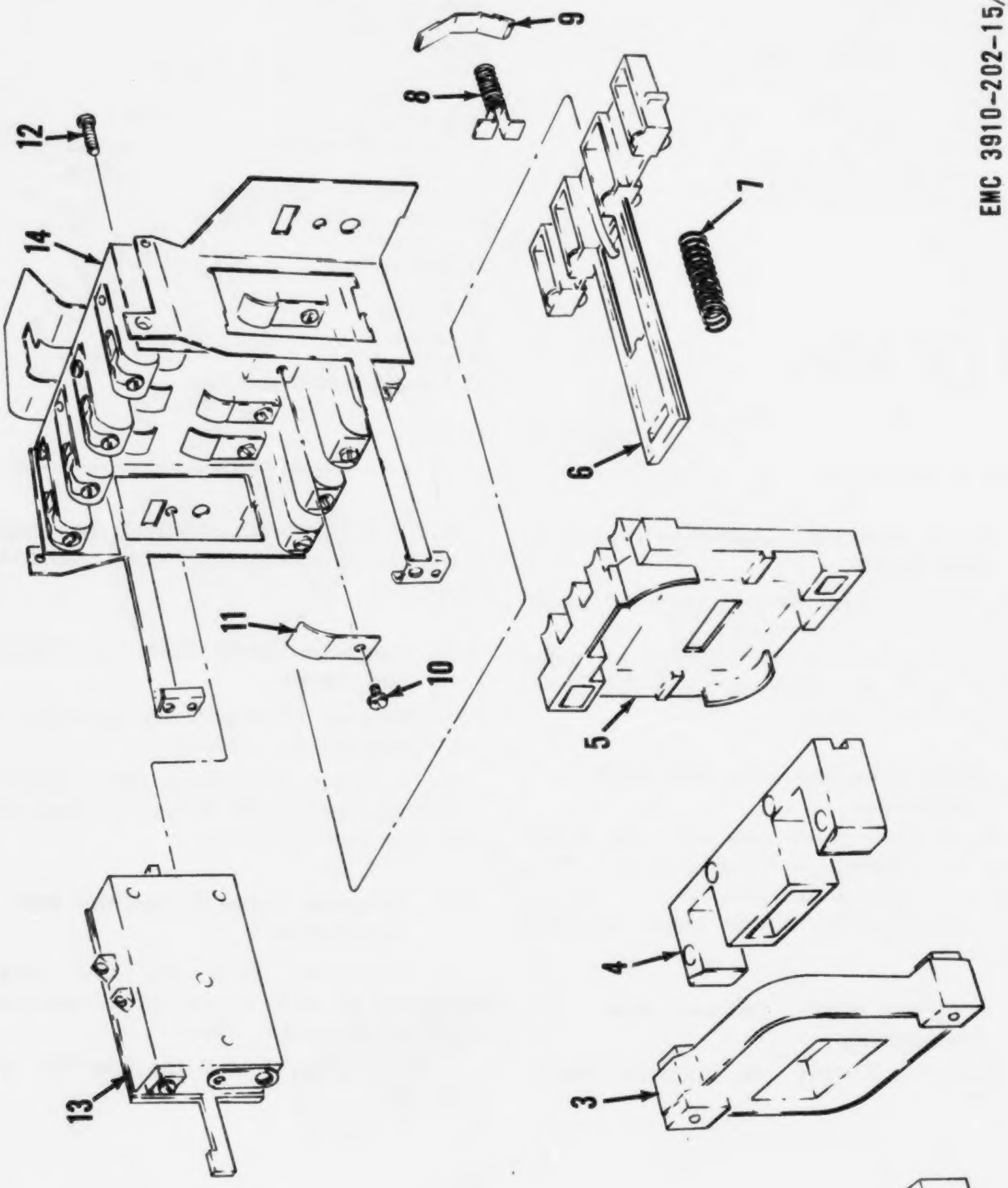
*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection and Repair.* Inspect for defective or damaged parts. Replace or repair all defective or damaged parts.

## 141. Magnetic Stater Reassembly and Installation

*a. Reassembly.* Reassemble the magnetic starter in the reverse order of the numerical sequence illustrated in figure 73.

*b. Installation.* Install the magnetic starter (par. 80).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EMC 3910-202-15/73

*Figure 73. Magnetic starter, exploded view.*

1 Retainer
2 Pole shoe
3 Coil
4 Pole
5 Arc chute cover
6 Contact arm
7 Spring
8 Spring (4 rqr)
9 Contact (4 rqr)
10 Screw, no. 8–32 X 3/16 in. (8 rqr)
11 Contact (8 rqr)
12 Screw, no. 8–32 X 3/8 in. (2 rqr)
13 Overload relay (2 rqr)
14 Contact Support

*Figure 73—Continued.*

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## Section VIII. HYDRAULIC CYLINDER

### 142. General

The hydraulic cylinder is a ram-type, single-action cylinder used to raise the conveyor to the proper operating height. It is operated by a hand pump and a control valve.

### 143. Hydraulic Cylinder Removal and Disassembly

*a. Removal.* Remove the hydraulic cylinder (par. 75).

*b. Dissassembly.* Disassemble the hydraulic cylinder in numerical sequence as instructed in figure 74.

### 144. Hydraulic Cylinder Cleaning, Inspection, and Repair

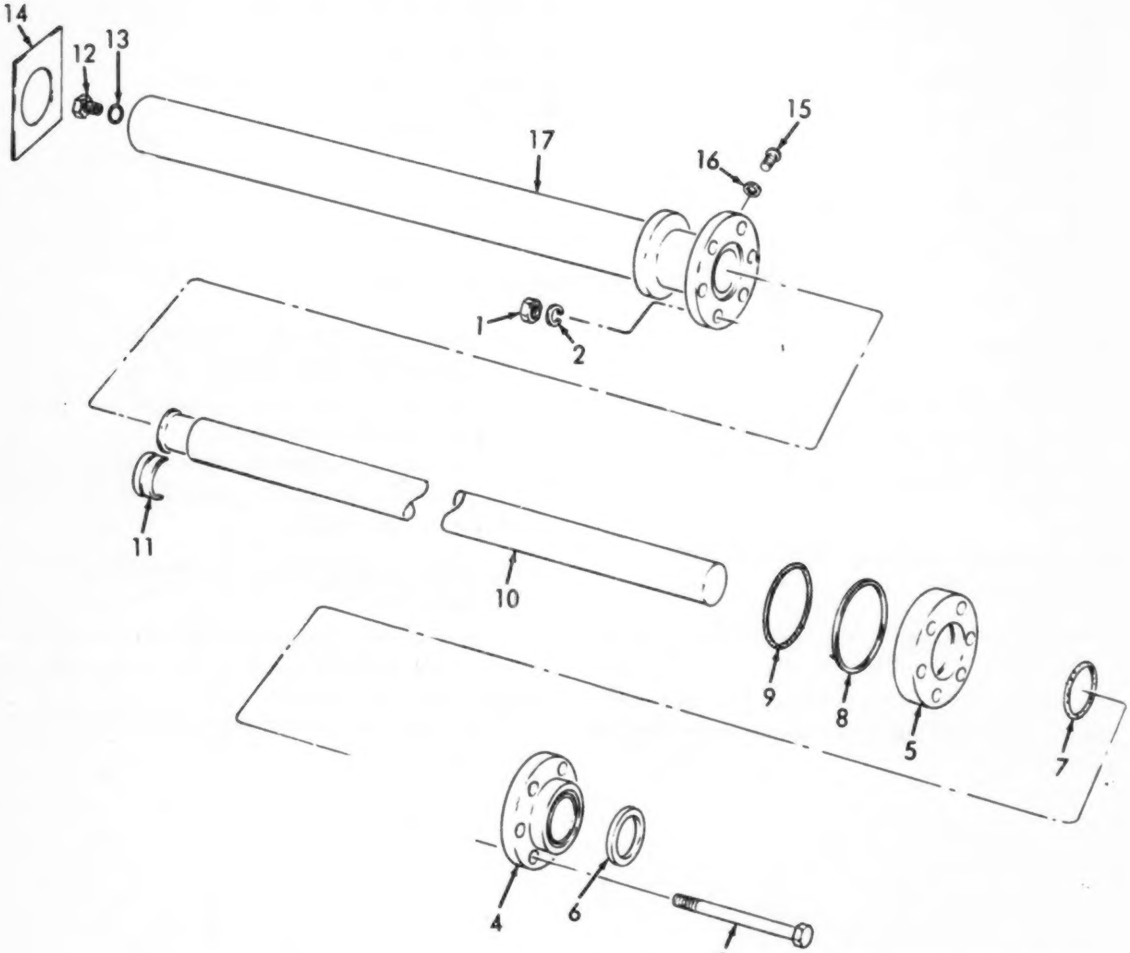
*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection and Repair.* Inspect for worn or damaged parts. Replace or repair all damaged, worn, or defective parts.

### 145. Hydraulic Cylinder Reassembly and Installation

*a. Reassembly.* Reassemble the hydraulic cylinder in the reverse order of the numerical sequence illustrated in figure 74.

*b. Installation.* Install the hydraulic cylinder (par. 75).



EMC 3910-202-15/74

1 Nut, 1/2–20 (6 rqr)
2 Washer, lock, 1/2 in. (6 rqr)
3 Screw, cap, 1/2–20 X 4 in. (6 rqr)
4 Head
5 Box
6 Wiper
7 Packing (5 rqr)
8 Washer
9 O-ring
10 Rod
11 Bearing (2 rqr)
12 Connector
13 O-ring
14 Plate
15 Screw, 1/4–20 X 1/4 in. (6 rqr)
16 Washer, 1/4 in. (6 rqr)
17 Cylinder

*Figure 74. Hydraulic cylinder, exploded view.*

## Section IX. BRAKE ASSEMBLY AND RELAY VALVE

### 146. General

The brake assembly and relay valve are used to help stop the conveyor when it is being towed. The brake assembly consists of the chambers, backing plates, and cylinders. The relay valve controls the air passage from prime mover to reservoir and to the chambers.

### 147. Brake Assembly Removal and Disassembly

*a. Removal.*

(1) Remove the brakeshoes (par. 95).

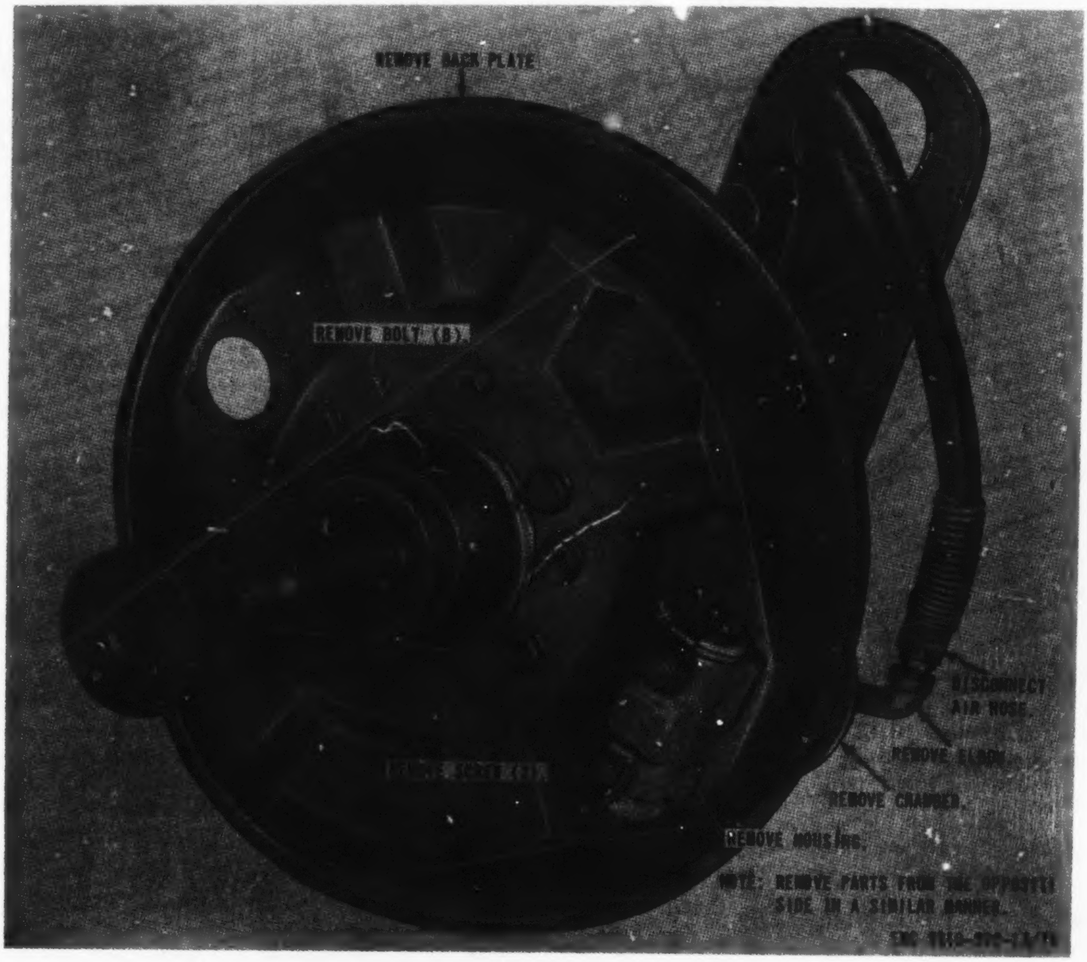
(2) Remove the chamber, backing plate, and housing as instructed in figure 75.

*b. Disassembly.* Disassemble the brake chamber, housing, shoes, and backing plate in numerical sequence as instructed in figure 76.

### 148. Brake Assembly Cleaning, Inspection, and Repair

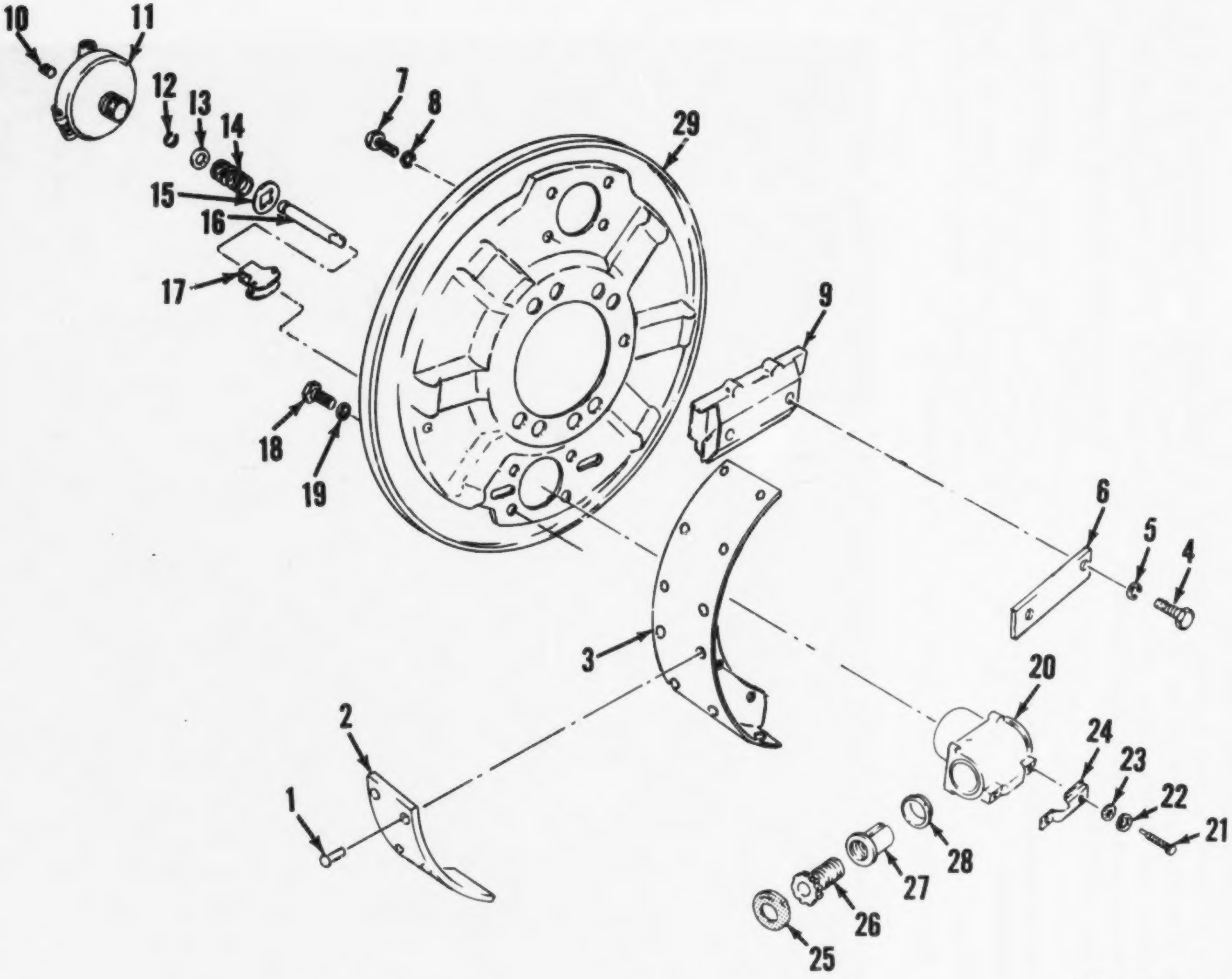
*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection and Repair.* Inspect all parts for wear or damage. Replace or repair a worn or damaged part.


REMOVE BACK PLATE
REMOVE BOLT (8).
REMOVE SCREW (2).
DISCONNECT AIR HOSE.
REMOVE ELBOW.
REMOVE CHAMBER.
REMOVE HOUSING.

NOTE: REMOVE PARTS FROM THE OPPOSITE SIDE IN A SIMILAR MANNER.

*Figure 75. Chamber, backing plate, and housing removal and installation.*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EMC 3910-202-15/76

*Figure 76. Brake chamber, housing, shoes and backing plate, exploded view.*

1 Rivet (24 rqr)
2 Lining (4 rqr)
3 Shoe (2 rqr)
4 Bolt, machine, 5/16-18 X 5/8 in. (2 rqr)
5 Washer, lock, 5/16 in. (2 rqr)
6 Retainer plate
7 Bolt, machine, 5/16-18 X 5/8 in. (2 rqr)
8 Washer, lock, 5/16 in. (2 rqr)
9 Anchor bracket
10 Grease fitting
11 Brake chamber
12 Washer, special
13 Washer
14 Spring
15 Washer
16 Plunger
17 Wedge assembly
18 Bolt, machine, 5/16-18 X 5/8 in. (4 rqr)
19 Washer, lock, 5/16 in. (4 rqr)
20 Finish housing
21 Bolt, special (2 rqr)
22 Washer, lock, IT, 5/16 in. (2 rqr)
23 Guide gasket (2 rqr)
24 Adjusting bolt detent (2 rqr)
25 Boot (2 rqr)
26 Adjusting plunger (2 rqr)
27 Plunger, housing (2 rqr)
28 Boot retainer (2 rqr)
29 Backing plate

*Figure 76—Continued.*

### 149. Brake Assembly Reassembly and Installation

*a. Reassembly.* Reassemble the brake chamber, housing, shoes, and backing plate in the reverse order of the numerical sequence illustrated in figure 76.

*b. Installation.*

(1) Install the chamber, backing plate and housing as illustrated in figure 75.

(2) Install the brakeshoes (par. 95).

### 150. Relay Valve Removal and Disassembly

*a. Removal.* Remove the relay valve (par. 89).

*b. Disassembly.* Disassemble the relay valve in numercial sequence as instructed in figure 77.

### 151. Relay Valve Cleaning, Inspection and Repair

*a. Cleaning.* Clean all parts with an approved cleaning solvent and dry throughly.

*b. Inspection and Repair.* Inspect all parts for wear or damage. Replace or repair a worn or defective part.

### 152. Relay Valve Reassembly and Installation

*a. Reassembly.* Reassemble the relay valve in the reverse order of the numerical sequence illustrated in figure 77.

*b. Installation.* Install the relay valve (par. 89).

## Section X. WIRING HARNESS

### 153. General

The motor wiring harness is incased in a conduit and runs from the motor to the magnetic starter. The light wiring harness supplies current from the prime mover to the marker, stop and tail, and blackout lights.

### 154. Lights and Motor Wiring Harness Removal

Place identification tags on the wire leads and terminals, and remove the wire leads.

*Caution:* In cold weather the insulation becomes brittle and the wiring can be damaged by excessive bending.

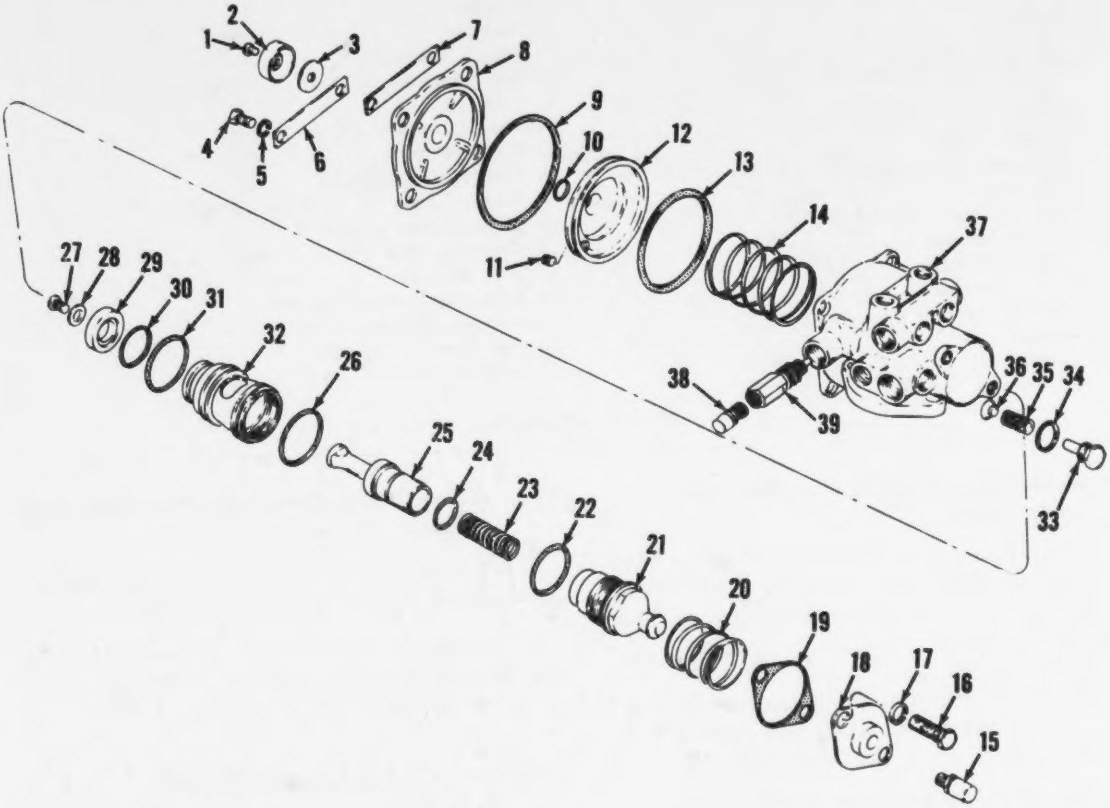
### 155. Lights and Motor Wiring Harness Cleaning, Inspection, and Repair

*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection and Repair.* Inspect all parts for wear or damage. Replace or repair all worn or damaged parts.

### 156. Lights and Motor Wiring Harness Installation

Refer to the wiring diagrams (figs. 4, 5) and identification tags placed on the wire leads and terminals, and install the wire leads.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EMC 3895-242-35/6

1 Screw, machine, No. 10-24 X 1/2 in.
2 Cover
3 Diaphragm
4 Bolt, machine, 5/16-18 X 3/4 in. (4 rqr)
5 Washer, lock, 5/16 in. (4 rqr)
6 Instruction tag
7 Identification tag
8 Cover
9 Grommet
9 Grommet
11 Pipe plug assembly
12 Relay piston
13 Quad ring
14 Spring
15 Breather valve assembly
16 Bolt, machine, 5/16-18 X 3/4 in. (2 rqr)
17 Washer, lock, 5/16 in. (2 rqr)
18 Cover plate
19 Gasket
20 Spring
21 Capnut
22 Grommet
23 Valve spring
24 Grommet
25 Inlet valve
26 Grommet
27 Screw, machine, 5/16-18 X 1/2 in.
28 Washer, flat, 5/16 in.
29 Exhaust valve
30 Preformed packing
31 Grommet
32 Piston
33 Screw, special
34 Grommet
35 Spring
36 Check valve
37 Body
38 Breather valve assembly
39 Check valve

*Figure 77. Relay valve, exploded view.*

## Section XI. SPINDLE AND AXLE FRAME ASSEMBLY

### 157. General

The conveyor is wheel-mounted to provide for easy movement at the work site or movement of short distances from one work site to another. It is made with a spindle to allow lateral movement to provide maximum stock piling flexibility with a minimum of conveyor movement.

### 158. Spindle Removal

*a.* Remove the rim and hub cap (par. 92).

*b.* Remove the brakeshoes (par 95).

*c.* Remove the backing plate (par. 147).

*d.* Remove the spindle a instructed in figure 78.

### 159. Spindle Cleaning and Inspection

*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect for any wear or damage. Replace a worn or damaged spindle.

### 160. Spindle Installation

*a.* Install the spindle as illustrated in figure 78.

*b.* Install the backing plate (par. 149).

*c.* Install the brakeshoes (par 95).

*d.* Install the rim and hubcap (par. 92).

### 161. Axle Frame Removal

*a.* Remove the axle assembly and lockpins (par 100).

*b.* Remove the rim and hubcap (par. 92).

*c.* Remove the backing plate (par. 147).

*d.* Remove the spindle (par. 158).

*Figure 78. Spindle removal and installation.*

### 162. Axle Frame Cleaning and Inspection

*a. Cleaning.* Clean with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect for wear, cracks, and breaks. Replace or repair a damage axle frame.

### 163. Axle Frame Installation

*a.* Install spindle (par. 160) on axle frame.

*b.* Install backing plate (par 149).

*c.* Install rim and hub cap (par. 92)

*d.* Install the axle assembly and lockpins on conveyor (par. 100).

## Section XII. CONVEYOR BELT GUARD AND FRAME ASSEMBLIES

### 164. General

The conveyor frame consists of four frame assemblies: the foot section, head section, and two main section assemblies. The conveyor belt guard is mounted in the center of the main frame to provide protection for the conveyor belt on its return half of the cycle.

### 165. Conveyor Belt Guard Removal

*a.* Remove conveyor belt (par. 50).

*b.* Remove troughing roller assemblies and belt guides (pars. 58, 67).

*c.* Remove frame braces (par. 97).

*d.* Remove the conveyor belt guard as instructed in figure 79.

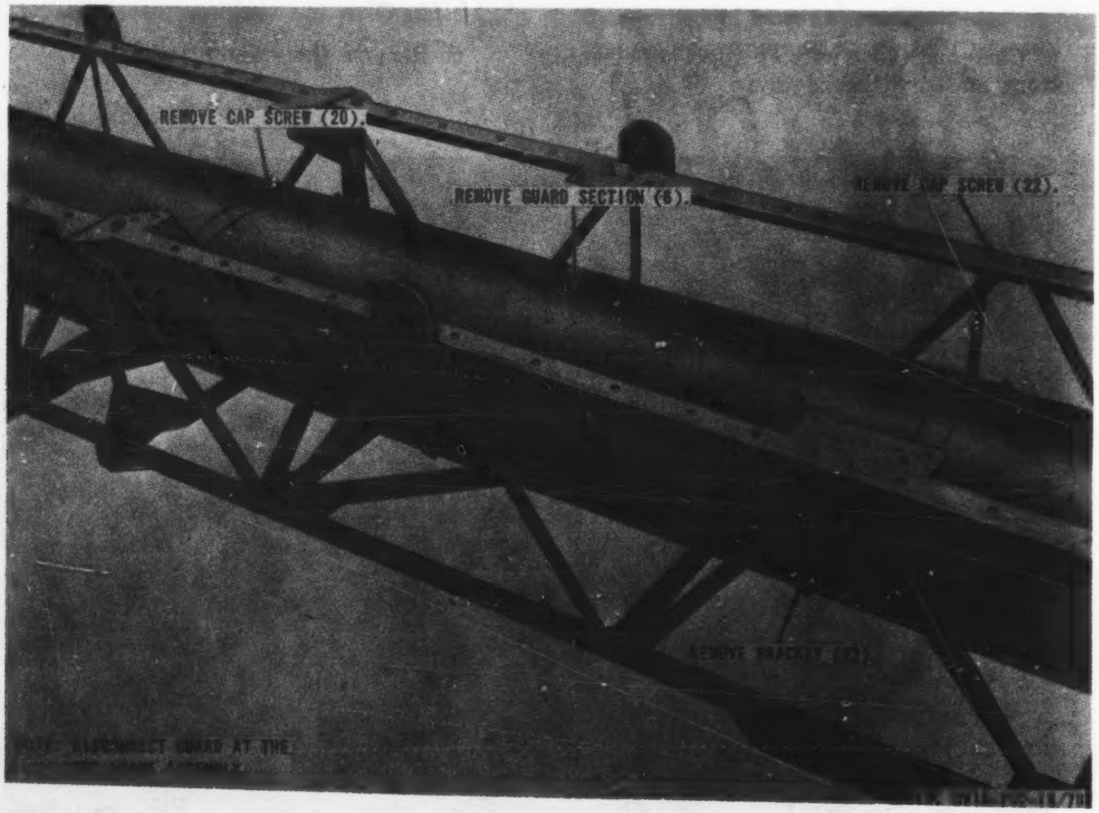

*Figure 79. Conveyor belt guard removal and installation.*

## 166. Conveyor Belt Guard Cleaning and Inspection

*a. Cleaning.* Clean all parts with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect the conveyor belt guard and replace or repair all damaged parts.

## 167. Conveyor Belt Guard Installation

*a.* Install the convey belt guard as illustrated in figure 79.

*b.* Install the frame braces (par. 97).

*c.* Install the troughing roller assemblies and belt guides (par 58, 67).

*d.* Install the conveyor belt (par. 50).

## 168. Head End Frame Assembly Removal

*a.* Remove the motor (par. 81).

*b.* Remove the gear reducer (par. 56).

*c.* Remove the head shaft pulley guard (par. 72).

*d.* Remove the external scraper (par. 70).

*e.* Remove the conveyor belt (par. 50).

*f.* Remove the head shaft and pulley (par. 125).

*g.* Remove the light wiring harness (par. 154).

*h.* Remove the clearance lights (par. 86).

*i.* Disconnect the conveyor belt return guard (par. 165).

*j.* Remove the head end frame assembly from the main frame as instructed in figure 80.

## 169. Head End Frame Assembly Cleaning and Inspection

*a. Cleaning.* Clean all parts with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect all parts for bends, breaks, and damage. Replace all damaged parts.

## 170. Head End Frame Assembly Installation

*a.* Install the head end frame on the main frame as illustrated in figure 80.

*b.* Connect the conveyor belt return guard (par. 167).

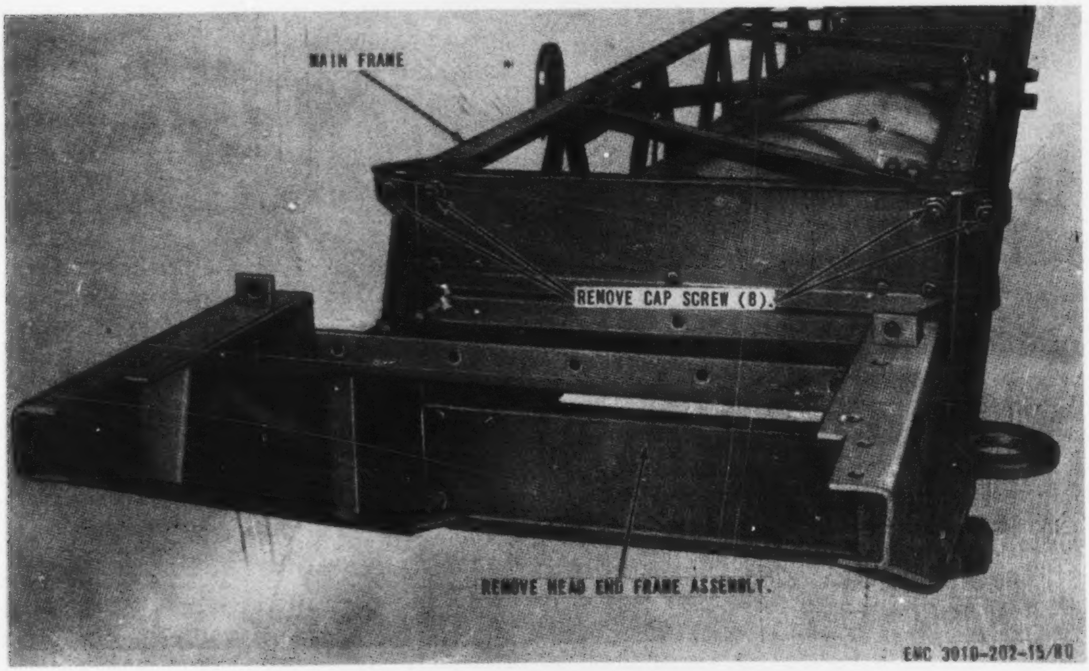

*Figure 80. Head end frame assembly removal and installation.*

*c.* Install the clearance lights (par. 86).
*d.* Install the light wiring harness (par. 156).
*e.* Install the head shaft and pulley (par. 127
*f.* Install the conveyor belt (par. 50).
*g.* Install the external scraper (par. 70).
*h.* Install the head shaft pulley guard (par. 72).
*i.* Install the gear reducer (par. 56).
*j.* Install the motor (par. 81).

## 171. Foot End Frame Assembly Removal

*a.* Remove the foot shaft pulley guard (par. 63).
*b.* Remove the safety chain (par. 65).
*c.* Remove the hitch (par. 66).
*d.* Remove the air hose and lines (par. 90).
*e.* Remove the light wiring harness (par. 154).
*f.* Remove the reflectors (par. 86).
*g.* Remove the hopper assembly (par. 69).
h. Remove the conveyor belt (par. 50).
*i.* Remove the foot shaft and pulley (par. 128).
*j.* Remove the flat roller assembly (par. 61).
*k.* Remove the troughing roller assembly (par. 58).
*l.* Remove the snub roller assembly (par. 60).
*m.* Disconnect the conveyor belt return guard (par. 165).
*n.* Remove the foot end frame assembly from the main frame as instructed in figure 81.

## 172. Foot End Frame Asembly Cleaning and Inspection

*a. Cleaning.* Clean all parts with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect all parts for bends, breaks, and other damage. Replace all damaged parts.

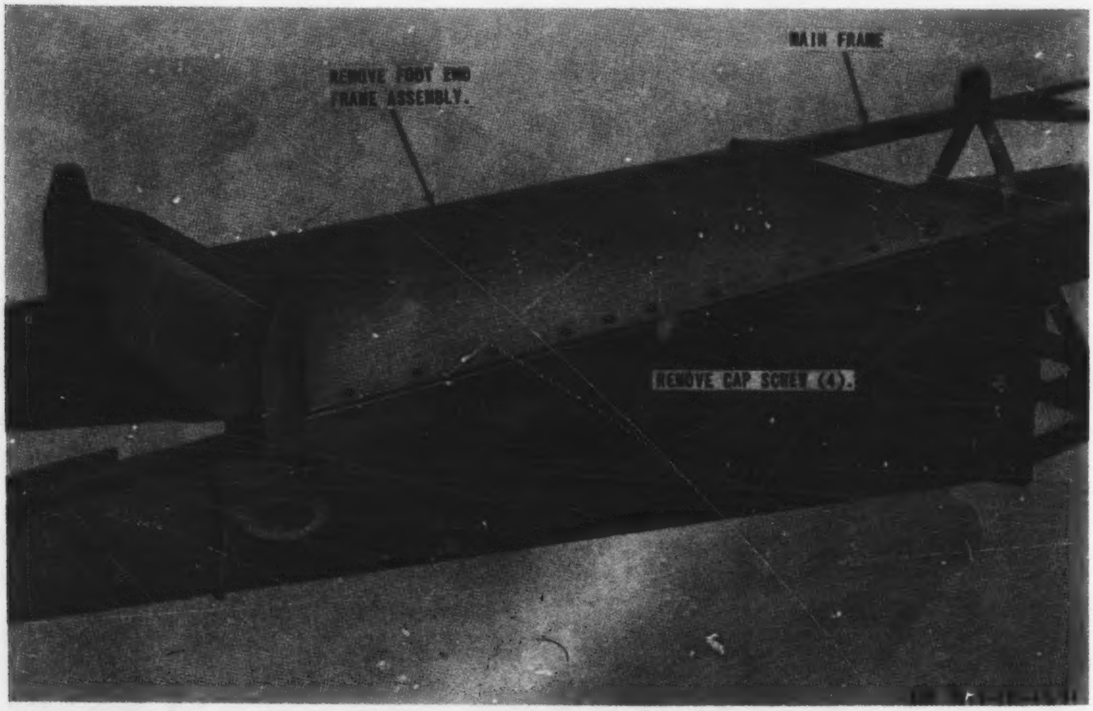

*Figure 81. Foot end frame assembly removal and installation.*

## 173. Foot End Frame Installation

*a.* Install the foot end frame assembly on the main frame as illustrated in figure 81.

*b.* Connect the conveyor belt return guard (par. 167).

*c.* Install snub roller assembly (par. 60).

*d.* Install the troughing roller assembly (par. 58).

*e.* Install the flat roller assembly (par. 61).

*f.* Install the foot shaft and pulley (par. 130).

*g.* Install the conveyor belt. (par. 50).

*h.* Install the hopper assembly (par. 69).

*i.* Install the reflectors (par. 86).

*j.* Install the light wiring harness (par. 156).

*k.* Install the air hose and lines (par. 90).

*l.* Install the hitch (par. 66).

*m.* Install the safety chain (par. 65).

*n.* Install the foot shaft pulley guard (par. 63).

## 174. Main Frame Assembly Removal

*a.* Remove the foot end frame assembly (par. 171).

*b.* Remove the head end frame assembly (par. 168).

*c.* Remove the return roller assemblies (par. 59).

*d.* Remove the axle assembly (par. 100).

*e.* Remove the upper push arm assembly (par. 99).

*f.* Remove the lower push arm assembly (par 98).

*g.* Remove the frame braces (par. 97).

*h.* Remove the conveyor belt return guard (par. 165).

## 175. Main Frame Assembly Cleaning and Inspection

*a. Cleaning.* Clean all parts with an approved cleaning solvent and dry thoroughly.

*b. Inspection.* Inspect all parts for cracks, breaks, and other damage. Replace all damaged parts.

## 176. Main Frame Assembly Installation

*a.* Install the conveyor belt return guard (par. 167).

*b.* Install the frame braces (par. 97).

*c.* Install the lower push arm (par. 98).

*d.* Install the upper push arm (par. 99).

*e.* Install the axle assembly (par. 100).

*f.* Install the return roller assemblies (par. 59).

*g.* Install the head end frame assembly (par. 170).

*h.* Install the foot end frame assembly (par. 173).

# APPENDIX I.

# REFERENCES

---

## 1. Dictionaries of Terms and Abbreviations

| | |
|---|---|
| AR 320–5 | Dictionary of United States Army Terms. |
| AR 320–50 | Authorized Abbreviations and Brevity Codes. |

## 2. Fire Protection

| | |
|---|---|
| TM 5–687 | Repairs and Utilities; Fire Protection Equipment and Appliances; Inspections, Operations, and Preventive Maintenance. |

## 3. Lubrication

| | |
|---|---|
| LO 5–3810–202–15 | Conveyor Belt 300 Tons per Hr; Wheel-Mounted; Pneumatic Tires Electric Driven; AC, 10 HP, 416 V, 3 Phase 60 Cycle; 50 Ft Long; 24 In. Belt (Barber-Greene Model PG70). |

## 4. Painting

| | |
|---|---|
| TB ENG 60 | Preservation and Painting of Serviceable Corps of Engineer Equipment. |
| SB 38–100 | Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used By The Army. |

## 5. Preventive Maintenance

| | |
|---|---|
| AR 700–38 | Unsatisfactory Equipment Report. |
| AR 750–5 | Maintenance Responsibilities and Shop Operation. |
| TM 5–505 | Maintenance of Engineer Equipment. |
| TM 5–764 | Electric Motor and Generator Repair. |
| TM 9–1870–1 | Care and Maintenance of Pneumatic Tires. |

## 6. Shipment and Limited Storage

| | |
|---|---|
| AR 743–505 | Limited Storage of Engineer Mechanical Equipment. |
| TM 9–200 | General packaging instructions for Ordnance general supplies. |
| TM 38–230 | Preservation, Packaging and Packing of Military Supplies and Equipment. |

## 7. Publication Indexes

| | |
|---|---|
| DA Pam 108–1 | Index of Army Motion Pictures, Film Strips, Slides, and Phono-Recordings. |
| DA Pam 310–1 | Index of Administrative Publications. |
| DA Pam 310–2 | Index of Blank Forms. |

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|---|---|
| DA Pam 310-3 | Index of Training Publications. |
| DA Pam 310-4 | Index of Technical Manuals, Technical Regulations, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders. |
| DA Pam 310-5 | Index of Graphic Training Aids and Devices. |
| DA Pam 310-25 | Index of Supply Manuals-Corps of Engineers. |

## 8. Supply Publications

| | |
|---|---|
| SM 10-1-C4-1 | Petroleum, Petroleum-Base Products, and Related Materials. |
| TM 5-3910-202-25P | Organizational Maintenance Repair Parts and Special Tools Lists. |

## 9. Training Aids

| | |
|---|---|
| FM 5-25 | Explosives and Demolition. |
| FM 21-5 | Military Training. |
| FM 21-6 | Techniques of Military Instruction. |
| FM 21-30 | Military Symbols. |

# APPENDIX II

# MAINTENANCE ALLOCATION CHART

## Section I. INTRODUCTION

### 1. General

This appendix contains explanations of all maintenance and repair functions authorized for the various echelons. Section II contains the maintenance allocation chart.

### 2. Maintenance

Maintenance is any action taken to keep material in a serviceable condition or to restore it to serviceability when it is unserviceable. Maintenance of materiel includes the following:

*a. Service.* To clean, to preserve, and to replenish fuel and lubricants.

*b. Adjust.* To regulate periodically to prevent malfunction.

*c. Inspect.* To verify serviceability and to detect incipient mechanical failure by scrutiny.

*d. Test.* To verify serviceability and to detect incipient mechanical failure by use of special equipment such as gages, meters, and so on.

*e. Replace.* To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.

*f. Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

*g. Overhaul.* To restore an item to completely serviceable condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

*h. Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to inspecting, cleaning, preserving, adjusting, replacing, welding, riveting, and straightening.

### 3. Explanation of Columns

*a. Functional Group.* The functional group is a numerical group set up on a functional basis. The applicable functional grouping indexes are taken from the Corps of Engineers functional grouping indexes, and appear on the maintenance allocation chart in their correct numerical sequence. These indexes are normally set up according to their proximity to each other and their function.

*b. Components and Related Operation.* This column contains the functional index group heading, subgroup headings, and a brief description of the part starting with the noun name. It also designates the operations to be performed such as service, adjust, inspect, test, replace, repair, and overhaul.

*c. Echelons of Maintenance.* This colum contains the various echelons of maintenance by number designation. An X in the appropriate echelon column and in line with an indicated maintenance function, authorizes the particular echelon to perform the function. The symbol X indicates the lowest echelon responsible for performing that particular function. The X does necessarily indicate repair parts will be stocked at that level. Echelons higher than the echelon annotated by X are authorized to perform the indicated function.

*d. Remarks.* The remarks column is used to explain why the maintenance function which is normally performed at a lower echelon is moved to a higher echelon. If the remark "special tool required" is indicated, applicable technical manuals will be consulated for its use and for requisitioning purposes.

## Section II. Maintenance Allocation Chart

| Functional group | Components and related operation | Echelons of maintenance | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 06 | ELECTRICAL SYSTEM (ENGINE AND VEHICULAR) | | | | | | |
| 0609.1 | Head, Tail, and Marker Lights | | | | | | |
| | Lights, tail and marker | | | | | | |
| | Replace | -- | X | | | | |
| | Lamps; lens; gasket | | | | | | |
| | Replace | -- | X | | | | |
| 0613 | Hull or Chassis Wiring Harness | | | | | | |
| | Harness, wiring | | | | | | |
| | Replace | -- | -- | X | | | |
| | Repair | -- | X | | | | |
| 0617 | Trailer couplings | | | | | | |
| | Cable, connector | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |
| 11 | Rear Axle | | | | | | |
| 1100 | Rear Axle Assembly | | | | | | |
| | Axle assembly, rear | | | | | | |
| | Repair | -- | -- | X | | | |
| 1101 | Housing, Beam Housing Covers, Plugs | | | | | | |
| | Frame, axle | | | | | | |
| | Replace | -- | -- | X | | | |
| 1104 | Steering | | | | | | |
| | Spindles | | | | | | |
| | Replace | -- | -- | X | | | |
| | Pins, lock | | | | | | |
| | Replace | -- | X | | | | |
| 12 | Brakes (Other Than Special Purpose) | | | | | | |
| 1202 | Service Brakes | | | | | | |
| | Brake assembly | | | | | | |
| | Adjust | -- | X | | | | |
| | Replace | -- | -- | X | | | |
| | Repair | -- | X | | | | |
| 1208.1 | Air Brake System | | | | | | |
| | Air brake System | | | | | | |
| | Service | X | | | | | |
| | Lines | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |
| | Fittings | | | | | | |
| | Replace | -- | X | | | | |
| 1208.3 | Brake Chambers, Diaphragms, Valves, Filters | | | | | | |
| | Chambers, brake | | | | | | |
| | Replace | -- | -- | X | | | |
| | Valve, relay | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | -- | X | | | |
| | Cleaners, air | | | | | | |
| | Service | X | | | | | |
| | Replace | -- | X | | | | |

| Functional group | Components and related operation | Echelons of maintenance | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 1209.3 | Air Reservoir, Fittings | | | | | | |
| | Reservoir, air | | | | | | |
| | Replace | -- | X | | | | |
| | Fittings | | | | | | |
| | Replace | -- | X | | | | |
| 1211 | Trailer-Brake Connections and Controls | | | | | | |
| | Hose; fittings; couplings; grommet, rubber | | | | | | |
| | Replace | -- | X | | | | |
| 13 | WHEELS AND TRACKS | | | | | | |
| 1311 | Wheel assembly | | | | | | |
| | Hub; drum; rim; seal | | | | | | |
| | Replace | -- | X | | | | |
| | Bearings | | | | | | |
| | Service | -- | X | | | | |
| | Replace | -- | X | | | | |
| 1313 | Tires, Tubes | | | | | | |
| | Tires | | | | | | |
| | Service | X | | | | | |
| | Replace | -- | X | | | | |
| | Tubes | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |
| 15 | FRAME | | | | | | |
| 1503 | Pintles and Towing Attachments | | | | | | |
| | Hitch; lunette; chains | | | | | | |
| | Replace | -- | X | | | | |
| 17 | BODY; CAB; HOOD; HULL | | | | | | |
| 1704 | Panels | | | | | | |
| | Panel, switch Box; panel, date plate | | | | | | |
| | Replace | -- | X | | | | |
| 1708 | Stowage Racks, Boxes, Straps | | | | | | |
| | Reel, power cable | | | | | | |
| | Service | X | | | | | |
| | Repair | -- | X | | | | |
| 22 | MISCELLANEOUS BODY, CHASSIS OR HULL, AND ACCESSORY ITEMS | | | | | | |
| 2202.1 | Mirrors, Reflectors, personnel Heaters, Defrosters, wipers, Air Horns | | | | | | |
| | Reflectors | | | | | | |
| | Replace | -- | X | | | | |
| 2210 | Data Plates and Instruction Holders | | | | | | |
| | Plates, data | | | | | | |
| | Replace | -- | -- | X | | | |
| | Plates, instruction and caution; holders, instruction | | | | | | |
| | Replace | -- | X | | | | |
| 26 | ACCESSORIES, PUBLICATIONS, TEST EQUIPMENT AND TOOLS | | | | | | |
| 2602.1 | Accessories | | | | | | |
| | Blocks, chock | | | | | | |

| Functional group | Components and related operation | Echelons of maintenance | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| | Replace | -- | X | | | | |
| 2602.2 | Common Tools | | | | | | |
| | Tools, common | | | | | | |
| | Replace | X | | | | | |
| 2602.4 | Publications | | | | | | |
| | Publications | | | | | | |
| | Replace | X | | | | | |
| 40 | ELECTRIC MOTORS (OTHER THAN ENGINE ACCESSORIES) | | | | | | |
| 4000 | Motor Assembly | | | | | | |
| | Motor | | | | | | |
| | Service | X | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | -- | X | | | |
| | Overhaul | -- | -- | -- | X | | |
| 4001 | Rotor Assemblies | | | | | | |
| | Rotor | | | | | | |
| | Replace | -- | -- | X | | | |
| 4002 | Stator Assemblies | | | | | | |
| | Stator assembly | | | | | | |
| | Replace | -- | -- | X | | | |
| | Repair | -- | -- | -- | X | | |
| 4004 | Ventilating System | | | | | | |
| | Fan | | | | | | |
| | Replace | -- | -- | X | | | |
| | Guard | | | | | | |
| | Replace | -- | X | | | | |
| 4005 | Frame Support and Housings | | | | | | |
| | End assemblies; frame center | | | | | | |
| | Repair | -- | -- | X | | | |
| | Box, junction | | | | | | |
| | Replace | -- | X | | | | |
| 4007 | Drive Components | | | | | | |
| | Belts | | | | | | |
| | Adjust | X | | | | | |
| | Replace | -- | X | | | | |
| | Pulleys | | | | | | |
| | Replace | -- | X | | | | |
| 4010 | Controls Starting; Main or Auxiliary | | | | | | |
| | Starter, magnetic | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | -- | X | | | |
| | Buttons, push; heaters | | | | | | |
| | Replace | -- | X | | | | |
| 4014 | Terminal Boxes, Panels or Junction Blocks, Wiring, etc. | | | | | | |
| | Conduit, flexible; connectors | | | | | | |
| | Replace | -- | -- | X | | | |
| | Wiring | | | | | | |
| | Replace | -- | -- | X | | | |
| | Repair | -- | X | | | | |
| | Cable, power | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |

| Functional group | Components and related operation | Echelons of maintenance | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| | Receptacle, power | | | | | | |
| | Replace | -- | X | | | | |
| 43 | HYDRAULIC, AIR AND VACUUM SYSTEMS (EXCLUDE BRAKE SYSTEMS) | | | | | | |
| 4300 | Hydraulic System | | | | | | |
| | System, hydraulic | | | | | | |
| | Service | X | | | | | |
| 4301 | Hose, Pipe, Fittings, Tubing | | | | | | |
| | Hose and fittings | | | | | | |
| | Replace | -- | X | | | | |
| 4301.1 | Strainers and Filters | | | | | | |
| | Strainer | | | | | | |
| | Service | X | | | | | |
| | Replace | -- | X | | | | |
| 4302 | Pump and Mounting Parts | | | | | | |
| | Pump, hand | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |
| 4304.1 | Check Valves | | | | | | |
| | Valve, flow control | | | | | | |
| | Replace | -- | X | | | | |
| 4307 | Hydraulic Cylinders | | | | | | |
| | Cylinder, hydraulic | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | -- | X | | | |
| 4308 | Oil Tank or Reservoirs | | | | | | |
| | Tank, hydraulic oil | | | | | | |
| | Replace | -- | X | | | | |
| | Cap, fill and breather | | | | | | |
| | Service | X | | | | | |
| | Replace | -- | X | | | | |
| 75 | CONVEYING; FEEDING; CRUSHING: SCREENING AND WASHING EQUIPMENT | | | | | | |
| 7500.2 | Drive Shaft | | | | | | |
| | Gear reducer assembly | | | | | | |
| | Service | X | | | | | |
| | Repair | -- | X | | | | |
| | Repair | -- | -- | X | | | |
| 7500.3 | Idlers, Tighteners | | | | | | |
| | Arm assembly, torque | | | | | | |
| | Replace | -- | X | | | | |
| 7500.5 | Guards and Attaching Parts | | | | | | |
| | Guards, conveyor belt | | | | | | |
| | Repair | -- | X | | | | |
| | Guards | | | | | | |
| | Replace | -- | X | | | | |
| 7501.1 | Belting Chain | | | | | | |
| | Belt, conveyor | | | | | | |
| | Adjust | X | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |
| | Scrapers | | | | | | |
| | Adjust | X | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |

| Functional group | Components and related operation | Echelons of maintenance | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 7501.2 | Conveyor Frames | | | | | | |
| | Frames, conveyor | | | | | | |
| | Repair | -- | X | | | | |
| | Arms | | | | | | |
| | Repair | -- | X | | | | |
| | Hopper | | | | | | |
| | Repair | -- | X | | | | |
| 7501.3 | Drums, Pulleys, Sprockets | | | | | | |
| | Drums and shafts | | | | | | |
| | Replace | -- | -- | X | | | |
| | Bearings | | | | | | |
| | Service | X | | | | | |
| | Replace | -- | -- | X | | | |
| | Lagging | | | | | | |
| | Replace | -- | X | | | | |
| 7501.4 | Rolls | | | | | | |
| | Roller assemblies | | | | | | |
| | Replace | -- | X | | | | |
| | Repair | -- | X | | | | |
| 76 | FIRE FIGHTING EQUIPMENT | | | | | | |
| 7603 | Fire extinguishers | | | | | | |
| | Extinguisher, fire | | | | | | |
| | Service | X | | | | | |
| | Replace | X | | | | | |

# APPENDIX III

# BASIC ISSUE ITEMS

## Section I. INTRODUCTION

### 1. General

Section II lists the accessories, tools, and publications required in 1st echelon maintenance and operation, initially issued with or authorize for the conveyor.

### 2. Explanation of Columns

*a. Source Codes.* The information provided in each column is as follows:

(1) *Technical services.* The basic number of the technical service assigned supply responsibility for the item is shown. Those spaces with no number shown are Corps of Engineers supply responsibility. Other technical service basic numbers are:

10—Quartermaster
12—Adjutant General

(2) *Source.* The selection status and method of supply are indicated by the following code symbols:

(*a*) P—applied to repair parts which are high mortality parts; procured by technical services, stocked in and supplied from the technical service depot system; and authorized for use at indicated maintenance echelons.

(*b*) P1—applied to repair parts which are low mortality parts; procured by technical services, stocked only in and supplied from technical service key depots, and authorized for installation at indicated maintenance echelons.

(3) *Maintenance.* The lowest maintenance echelon authorized to use, stock, install or manufacture the parts is indicated by the following code symbol: O—Organizational maintenance (1st and 2nd echelons)

*b. Federal Stock Numbers.* The Federal stock number shown in this column, will be used for requisitioning purposes.

*c. Description.*

(1) The item name and a brief description of the parts are shown.

(2) A five-digit Federal supply code for manufacturers and/or other technical services is shown in parentheses followed by the manufacturer's part number. This number will be used for requisitioning purposes if no Federal stock number is indicated in the Federal stock number column.

*Example:* (08645) 86453

(3) The letters "GE", shown in parentheses immediately following the description, indicate General Engineer supply responsibility for the part.

*d. Unit of Issue.* If no abbreviation is shown in this column, the unit of issue is "each".

*e. Expendability.* Those items classified as nonexpendable are indicated by letters "NX". Items not indicated by "NX" are expendable.

*f. Quantity Authorized.* This column lists the quantities of repair parts, accessories, tools, or publications authorized for issue to the equipment operator or crew as required.

*g. Quantity Issued with Equipment.* This column lists the quantities of repair parts, accessories, tools, or publications that are initially issued with each item of equipment. Those indicated by an asterisk are to be requisitioned through normal supply channels as required.

*h. Illustrations.*

(1) *Figure number.* Provides the identifying number of the illustration.

(2) *Item number.* Provides the referenced number for the part shown in the illustration.

## 3. Comments and Suggestions

Suggestions and recommendations for changes to the Basic Issue Items List will be submitted on DA Form 2028 to the Commanding General, U.S. Army Engineer Maintenance Center, Corps of Engineers, P. O. Box 119, Columbus 16, Ohio; ATTN: EMCDM. Direct communication is authorized.

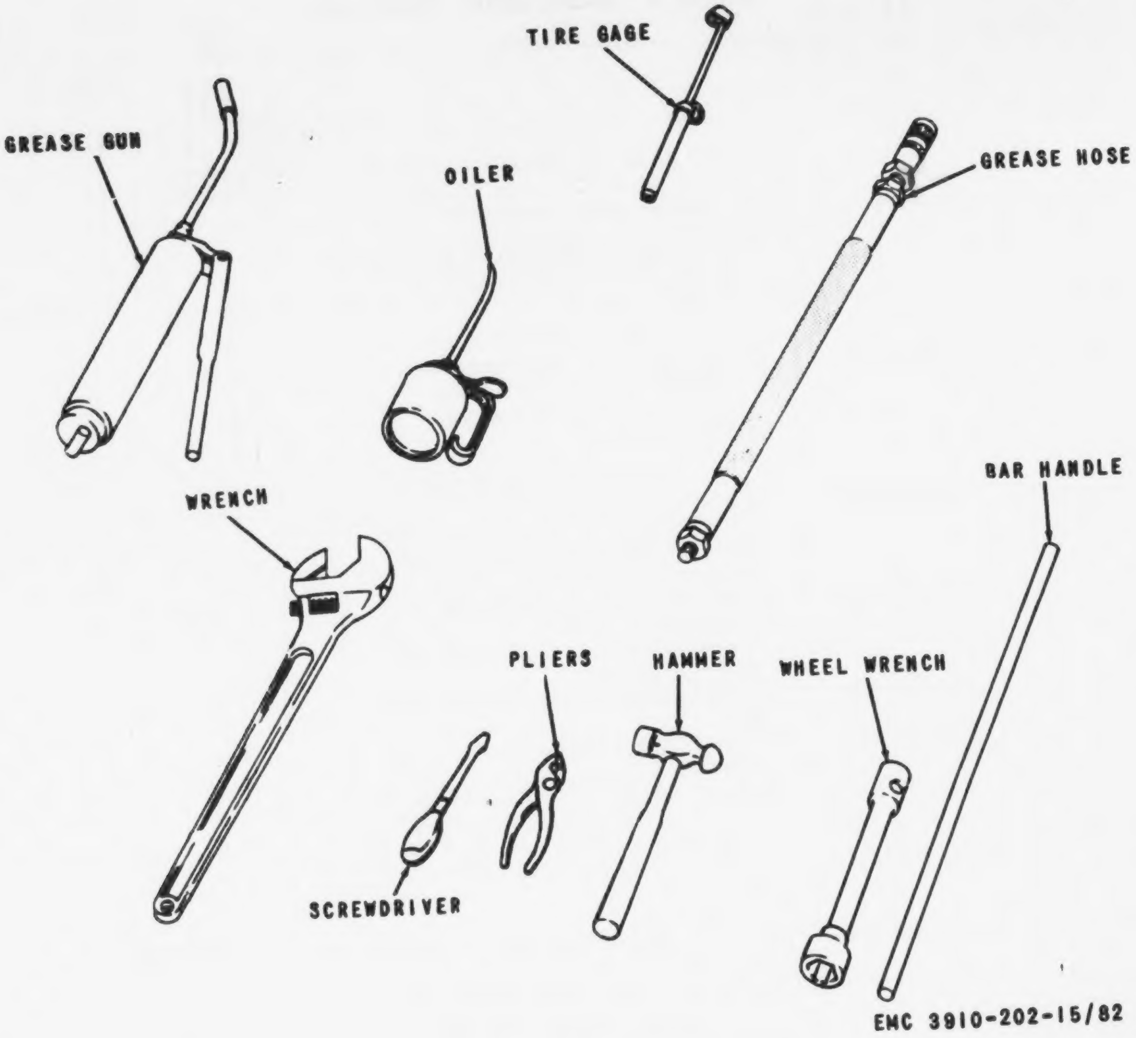
TIRE GAGE
GREASE GUN
OILER
GREASE HOSE
BAR HANDLE
WRENCH
PLIERS
HAMMER
WHEEL WRENCH
SCREWDRIVER
EMC 3910-202-15/82

*Figure 82. Basic issue items.*

## Section II. BASIC ISSUE ITEMS LIST

| Technical service | Source | Maintenance | Recoverability | Federal stock No. | Description | Unit of issue | Expendability | Quantity authorized | Quantity issued with equipment | Illustration |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  |  | Fig. | Item |
|  |  |  |  |  | GROUP 26—ACCESSORIES PUBLICATIONS, TEST EQUIPMENT AND TOOLS |  |  |  |  |  |  |
|  |  |  |  |  | 2602.1 ACCESSORIES |  |  |  |  |  |  |
| 10 | P | O |  | 7520–559–9618 | CASE: Operations and Maintenance **publications cotton duck, water** repellent and mildew resistant MIL–B–11743–B |  |  | 1 | 1 |  |  |
|  |  |  |  |  | 2602.2 COMMON TOOLS |  |  |  |  |  |  |
| 10 | P | O |  | 4930–360–2801 | GREASE GUN, HAND: lever operated, 16 ounce capacity extension, 7 inches long and hydraulic coupler MIL–G–3859. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 4930–430–3264 | HOSE, GREASE: 20 inches long |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 5120–223–7396 | PLIERS, SLIP JOINT: straight nose type, combination with cutters, 6 in. long. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 5930–273–3649 | **OILER, HAND: 8 ounce capacity, force** feed. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 5120–277–9491 | SCREWDRIVER, FLAT TIP: 1/4 inch width tip 9 inches long. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 5120–423–6728 | WRENCH, OPEN END ADJUSTABLE: 15 in. long, O to 1.698 in. opening. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 4910–449–6579 | GAGE, TIRE PRESSURE: 10 to 160 lbs. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 5120–473–6540 | WRENCH, WHEEL STUD NUT: double head socket, 1 and 1–1/2 in. opening, 12–1/2 in. lg. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 5120–378–4287 | HANDLE BAR: wheel stud nut wrench 36 in. lg. |  |  | 1 | (*) | 82 |  |
| 10 | P | O |  | 5120–224–4046 | **HAMMER HAND: ballpeen 1–1/4** lb. |  |  | 1 | (*) |  |  |
|  |  |  |  |  | 2602.4 PUBLICATIONS |  |  |  |  |  |  |
| 12 |  |  |  |  | DEPARTMENT OF THE ARMY LUBRICATION ORDER LO 5–3910–202–15 |  |  | 1 | 1 |  |  |
| 12 |  |  |  |  | DEPARTMENT OF THE ARMY OPERATOR, ORGANIZATIONAL FIELD AND DEPOT MAINTENANCE MANUAL TM 5–3910–202–15 |  |  | 2 | 2 |  |  |
|  |  |  |  |  | 7603 FIRE EXTINGUISHER |  |  |  |  |  |  |
|  | P1 | O |  | 4910–555–8837 | EXTINGUISHER, FIRE: monobromotrifluoromethane charged; hand; shatterable cylinder penetrating seal valve; stored pressure; w/bracket 2.75 lb (Halon 1301) Walter Kidde T–2 or equal (GE). |  |  | 1 | 1 |  |  |
|  | P1 | O |  | 4210–383–7129 | EXTINGUISHER FIRE: carbon dioxide; charged; hand; nonshatterable cylinder; permanent shutoff valve; squeeze-grip or trigger control; 5 lb MIL Spec E–468 Type 1 Class 1. |  |  |  |  |  |  |

| Technical service | Source | Maintenance | Recoverability | Federal stock No. | Description | Unit of issue | Expendability | Quantity authorized | Quantity issued with equipment | Illustration Fig. | Illustration Item |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | O | | | 4210-708-0031 | CYLINDER, CHARGED: | | | 1 | (*) | | |
| P | O | | | 5340-597-2329 | SEAL LEAD: Circular; 2 holes; 3/8 in. od; No. 22 or 23 AWG copper wire, in. lg.<br>*Note.* Requisition CO$_2$ extinguishers until depot stocks are exhausted. | | | 1 | (*) | | |

# INDEX

| | Paragraph | Page |
|---|---|---|
| Adjustments: | | |
| Brakeshoes | 95*d* | 79 |
| Conveyor belt | 50*a* | 39 |
| Drive belts | 53*a* | 31 |
| External scraper | 70*a* | 46 |
| Flashing | 68*a* | 46 |
| Internal scraper | 71*a* | 46 |
| Air filter | 88 | 74 |
| Air hoses, lines, and fittings | 90 | 74 |
| Air system: | | |
| Air filter | 88 | 74 |
| Air hoses, lines, and fittings | 90 | 74 |
| General | 87 | 74 |
| Relay valve, air reservoir, and fittings | 89 | 74 |
| Axel assembly and lockpins | 100 | 85 |
| Axle frame: | | |
| Cleaning and inspection | 162 | 120 |
| Installation | 163 | 120 |
| Removal | 161 | 119 |
| Bearing and seal | 93 | 79 |
| Belt guides | 67 | 46 |
| Brake assembly: | | |
| Cleaning, inspection, and repair | 148 | 115 |
| Reassembly and installation | 149 | 117 |
| Removal and disassembly | 147 | 115 |
| Brake assembly and relay valve: | | |
| Brake assembly | 147–149 | 115 |
| General | 146 | 115 |
| Relay valve | 150–152 | 117 |
| Troubleshooting | 123 | 100 |
| Brakeshoes | 95 | 79 |
| Clearance lights, reflectors, and brackets | 86 | 63 |
| Controls and instruments | 16,17 | 16,16 |
| Conveyor belt | 50 | 30 |
| Tabulated data | 6*c* | 6 |
| Conveyor belt drive assembly: | | |
| Conveyor belt | 50 | 30 |
| Drive belt guard | 52 | 30 |
| Drive belts | 53 | 31 |
| Drive pulleys | 54 | 31 |
| Gear reducer assembly | 56 | 32 |
| General | 49 | 30 |
| Lagging | 55 | 31 |
| Torque arm assembly | 51 | 30 |
| Conveyor belt guard: | | |
| Cleaning and inspection | 166 | 121 |
| Installation | 167 | 121 |
| Removal | 165 | 120 |

| | Paragraph | Page |
|---|---|---|
| Conveyor belt guard and frame assemblies: | | |
| Conveyor belt guard | 165–167 | 120 |
| Foot end frame assembly | 171–173 | 122 |
| General | 164 | 120 |
| Head end frame assembly | 168–170 | 121 |
| Main frame assembly | 174–176 | 123 |
| Conveyor frame components: | | |
| Belt guides | 67 | 46 |
| External scraper assembly | 70 | 46 |
| Flashing | 68 | 46 |
| Foot shaft pulley guard | 63 | 43 |
| General | 62 | 43 |
| Head shaft pulley guard | 72 | 46 |
| Hitch | 66 | 46 |
| Hopper assembly | 69 | 46 |
| Internal scraper assembly | 71 | 47 |
| Lunette | 64 | 43 |
| Safety chains | 65 | 43 |
| Demolition of conveyor to prevent enemy use: | | |
| Demolition by explosives or weapons fire | 103 | 89 |
| Demolition to render the conveyor inoperative | 102 | 89 |
| General | 101 | 89 |
| Other demolition methods | 104 | 89 |
| Training | 105 | 89 |
| Description and data (field and depot) | 110 | 95 |
| Description and data (organizational) | 3 | 3 |
| Detailed lubrication information | 37 | 21 |
| Differences in models | 5 | 4 |
| Drive belt guard | 52 | 30 |
| Drive belts | 53 | 31 |
| Drive pulleys | 54 | 31 |
| Electrical conduit receptacle | 83 | 62 |
| Electrical systems: | | |
| Clearance lights, reflectors, annd brackets | 86 | 63 |
| Electrical conduit receptacle | 83 | 62 |
| Electrical motor junction box and guard | 81 | 61 |
| General | 77 | 59 |
| Magnetic starter, heaters, push buttons, and power receptacle | 80 | 61 |
| Power cable | 78 | 59 |
| Power cable reel and bracket | 79 | 61 |
| Tail and blackout lamp and lens replacement | 84 | 63 |
| Tail and blackout light | 85 | 63 |
| Trailer unit connector, cable and receptacle | 82 | 62 |
| Troubleshooting | 46,117 | 30 |
| Electric motor and magnetic starter assemblies: | | |
| General | 135–141 | 109 |
| Identification | 4*h* | 3 |
| Magnetic starter | 139 | 111 |
| Motor assembly | 136–138 | 109 |
| Tabulated data | 6*b* | 6 |
| Troubleshooting | 118,119 | 99,99 |
| Electric motor junction box and guard | 81 | 61 |
| External scraper assembly | 70 | 46 |
| Field and depot maintenance repair parts | 115 | 99 |
| Flashing | 68 | 46 |
| Flat roller assembly | 61 | 39 |

| | Paragraph | Page |
|---|---|---|
| Foot end frame assembly: | | |
| Cleaning and inspection | 172 | 122 |
| Installation | 173 | 123 |
| Removal | 171 | 122 |
| Foot shaft, bearings, and pulley: | | |
| Cleaning and inspection | 129 | 100 |
| Installation | 130 | 100 |
| Removal | 128 | 100 |
| Foot shaft pulley guard | 63 | 43 |
| Frame cross braces | 97 | 85 |
| Gear reducer assembly (field and depot): | | |
| Cleaning, inspection, and repair | 133 | 105 |
| General | 131 | 105 |
| Reassembly and installation | 134 | 105 |
| Removal and disassembly | 132 | 105 |
| Troubleshooting | 122 | 100 |
| Gear reducer assembly (organizational) | 56 | 32 |
| Gear reducer assembly repair and rebuild data (table II) | | 96 |
| Head and foot shaft, bearings, and pulley assemblies: | | |
| Foot shaft, bearings, and pulley | 128–130 | 100 |
| General | 124 | 100 |
| Head shaft, bearings, and pulley | 125–127 | 100 |
| Head and frame assembly: | | |
| Cleaning and inspection | 169 | 121 |
| Installation | 170 | 121 |
| Removal | 168 | 121 |
| Head shaft, bearings, and pulley: | | |
| Cleaning and inspection | 126 | 100 |
| Installation | 127 | 100 |
| Removal | 125 | 100 |
| Head shaft pulley guard | 72 | 46 |
| Hitch | 66 | 46 |
| Hopper assembly | 69 | 46 |
| Hub, adapter, and drum | 94 | 79 |
| Hydraulic cylinder (field and depot) | | |
| Cleaning, inspection, and repair | 144 | 113 |
| General | 142 | 113 |
| Reassembly and installation | 145 | 113 |
| Removal and disassembly | 143 | 113 |
| Tabulated data | 6*g* | 6 |
| Hydraulic cylinder (organizational): | 75 | 57 |
| Hydraulic flow control valve, hand pump, and hose | 74 | 57 |
| Hydraulic oil tank, cap, and strainer | 76 | 58 |
| Hydraulic system: | | |
| Troubleshooting | 47,121 | 30,99 |
| General | 73 | 57 |
| Hydraulic cylinder | 75 | 57 |
| Hydraulic flow control valve, hand pump, and hose | 74 | 57 |
| Hydraulic oil tank, cap, and strainer | 76 | 58 |
| Indentification | 4 | 3 |
| Inspection and maintenance of equipment in storage | 109 | 92 |
| Installation or setting-up instructions | 11 | |
| Internal scraper assembly | 71 | 46 |
| Lagging | 55 | 31 |
| Limited storage: | | |
| Inspection and maintenance of equipment in storage | 109 | 92 |
| Preparation of equipment for storage | 108 | 92 |
| Lower push arm | 98 | 85 |

| | Paragraph | Page |
|---|---|---|
| Lubrication: | | |
| Detailed lubrication information | 37 | 21 |
| General lubrication informaton | 36 | 21 |
| Lunette | 64 | 43 |
| **Magnetic starter:** | | |
| Cleaning, inspection, and repair | 140 | 111 |
| Reassembly and installation | 141 | 111 |
| Removal and disassembly | 139 | 111 |
| Magnetic starter heaters, push buttons, and power receptacle | 80 | 61 |
| Main frame assembly: | | |
| Cleaning and inspection | 175 | 123 |
| Installation | 176 | 123 |
| Removal | 174 | 123 |
| Maintenance and operating supplies (table I) | | 10 |
| Motor assembly: | | |
| Cleaning, inspection, and repair | 137 | 111 |
| Reassembly and installationn | 138 | 111 |
| Removal and disassembly | 136 | 109 |
| Movement to a new work site: | | |
| Dismantling for movement | 14 | 16 |
| Reinstallation after movement to a new work site | 15 | 16 |
| Operation of auxiliary materiel used in conjunction with the belt conveyor: | | |
| Fire extinguisher description | 29 | 19 |
| Maintenance | 32 | 20 |
| Operation | 30 | 19 |
| Replacement of cylinder | 31 | 19 |
| Operation under unusual conditions: | | |
| Fording | 28 | 19 |
| General | 22 | 19 |
| Operation in dusty or sandy areas | 26 | 19 |
| Operation in extreme cold | 23 | 19 |
| Operation in extreme heat | 24 | 19 |
| Operation in salt water areas | 27 | 19 |
| Operation under rainy or humid conditions | 25 | 19 |
| Operation under usual conditions: | | |
| General | 18 | 17 |
| Operating details | 21 | 17 |
| Starting the belt conveyor | 19 | 17 |
| Stopping the belt conveyor | 20 | 17 |
| Operator and organizational maintenance tools and equipment: | | |
| Basic issue tools and equipment | 34 | 21 |
| Organizational maintenance repair parts | 35 | 21 |
| Special tools and equipment | 33 | 21 |
| Operator's daily service | 39 | 25 |
| Power cable | 78 | 59 |
| Power cable reel and bracket | 79 | 61 |
| Preparation of equipment for shipment | 106 | 91 |
| Preparation of equipment for storage | 108 | 92 |
| Preventive maintenance services: | | |
| General | 38 | 25 |
| Operator's daily service | 39 | 25 |
| Organizational maintenance | 40 | 27 |
| Quarterly preventive maintenance services | 41 | 27 |
| Push arms, axle assembly, and frame cross braces: | | |
| Axle assembly and lockpins | 100 | 85 |
| Frame cross braces | 97 | 85 |
| General | 96 | 85 |

| | Paragraph | Page |
|---|---|---|
| Lower push arm | 98 | 85 |
| Upper push arm | 99 | 85 |
| Record and report forms (field and depot) | 111 | 96 |
| Record and report forms (organizational) | 2 | 3 |
| Relay valve: | | |
| Cleaning, inspection, and repair | 151 | 117 |
| Reassembly and installation | 152 | 117 |
| Removal and disassembly | 150 | 117 |
| Relay valve, air reservoir, and fittings | 89 | 74 |
| Return roller assemblies | 59 | 38 |
| Roller assemblies: | | |
| Flat roller assembly | 61 | 39 |
| General | 57 | 38 |
| Return roller assemblies | 59 | 38 |
| Snub roller assemblies | 60 | 39 |
| Troughing roller assemblies | 58 | 38 |
| Safety chains | 65 | 43 |
| Service upon receipt of equipment: | | |
| Inspection and servicing used equipment | 13 | 13 |
| Inspection of new equipment | 9 | 13 |
| Installation of separately packed components | 10 | 13 |
| Installation or setting-up instructions | 11 | 13 |
| Servicing new equipment | 12 | 13 |
| Unloading of belt conveyor | 7 | 11 |
| Unpacking equipment | 8 | 13 |
| Servicing new equipment | 12 | 13 |
| Shipment within zone of interior: | | |
| Loading equipment for shipment | 107 | 92 |
| Preparation of equipment for shipment | 106 | 91 |
| Snub roller assemblies | 60 | 39 |
| Special tools and equipment (field annd depot) | 114 | 99 |
| Spindle: | | |
| Cleaning and inspection | 159 | 119 |
| Installation | 160 | 119 |
| Removal | 158 | 119 |
| Spindle and axle frame assembly: | | |
| Axle frame | 161–163 | 119 |
| General | 157 | 119 |
| Spindle | 158–160 | 119 |
| Tables: | | |
| I. Maintenance and operating supplies | | 10 |
| II. Gear reducer assembly repair and rebuild data | | 96 |
| III. Time standards | | 97 |
| Tabulated data (field and depot) | 113 | 95 |
| Tabulated data (organizational) | 6 | 6 |
| Tail and blackout lamp and lens replacement | 84 | 63 |
| Tail and blackout light | 85 | 63 |
| Time standards (table III) | | 97 |
| Tire, tube, rim, and hubcap | 92 | 79 |
| Tabulated data | 6*f* | 6 |
| Torque arm assembly | 51 | 30 |
| Trailer unit connector, cable, and receptacle | 82 | 62 |
| Troubleshooting (field and depot): | | |
| Brake and relay valve assemblies | 123 | 100 |
| Electric motors and starter assembly | 118,119 | 99 |
| Electrical system | 117 | 99 |
| Gear reducer assembly | 122 | 100 |
| General | 116 | 99 |
| Head or foot shaft pulley assembly | 120 | 99 |
| Hydraulic system | 121 | 99 |

| | Paragraph | Page |
|---|---|---|
| Troubleshooting (organizational): | | |
| Conveyor | 43-45 | 29 |
| Electrical system | 46 | 30 |
| Field expedient repairs | 48 | 30 |
| General | 42 | 29 |
| Hydraulic system | 47 | 30 |
| Troughing roller assemblies | 58 | 38 |
| Unloading of belt conveyor | 7 | 11 |
| Unpacking equipment | 8 | 13 |
| Upper push arm | 99 | 85 |
| Wheel assembly: | | |
| Bearing and seal | 93 | 79 |
| Brakeshoes | 95 | 79 |
| General | 91 | 79 |
| Hub, adapter, and drum | 94 | 79 |
| Tire, tube, rim, and hubcap | 92 | 79 |
| Wiring harness: | | |
| Cleaning, inspection, and repair | 155 | 117 |
| General | 153 | 117 |
| Installation | 156 | 117 |
| Removal | 154 | 117 |

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